TECHNICAL PROGRAMME

70th INTERNATIONAL ASTRONAUTICAL CONGRESS

21–25 October 2019 | Washington, D.C.

TECHNICAL SESSIONS TS

SPECIAL SESSIONS SpS

INTERACTIVE PRESENTATIONS iP

KEYNOTES Keynotes

INDUSTRY ANCHOR SPONSOR

LOCKHEED MARTIN

Space: The Power of the Past, the Promise of the Future

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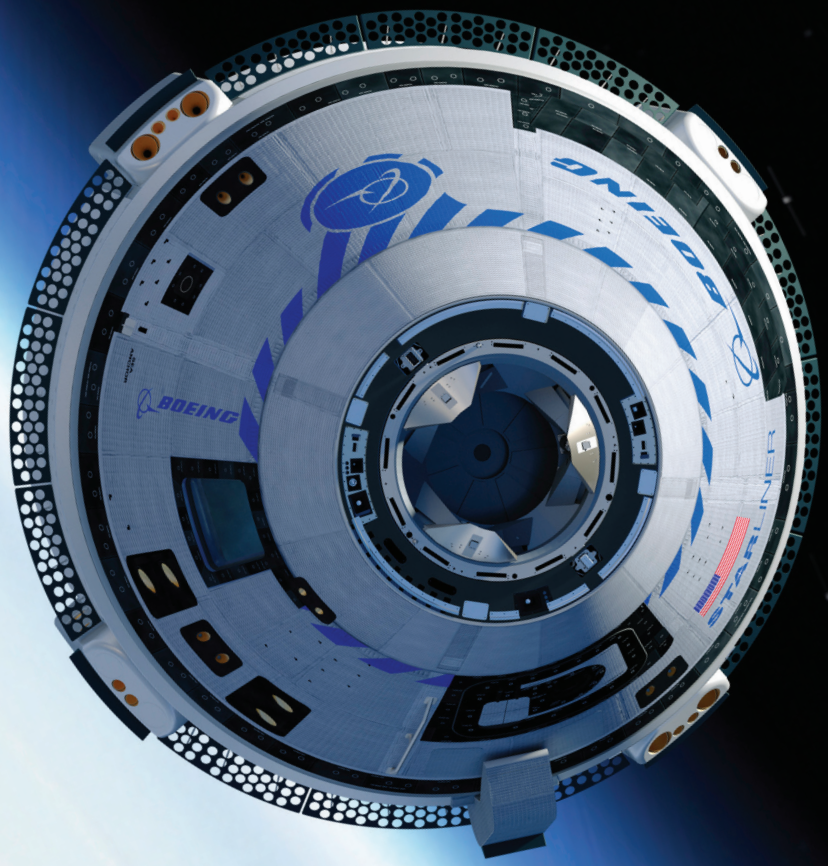

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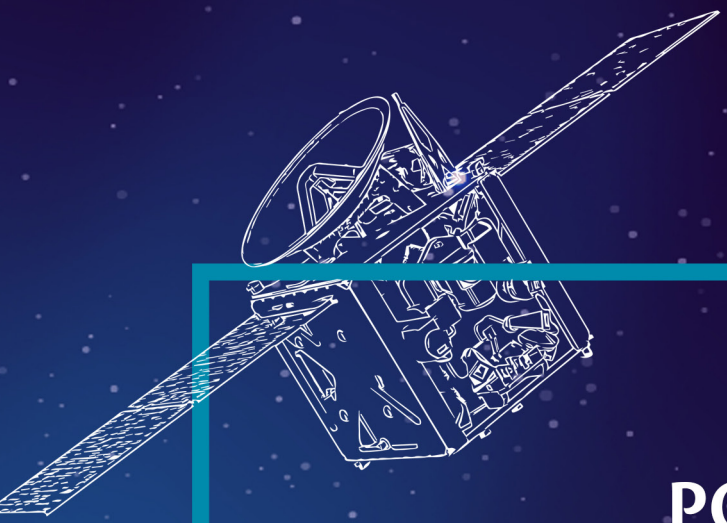

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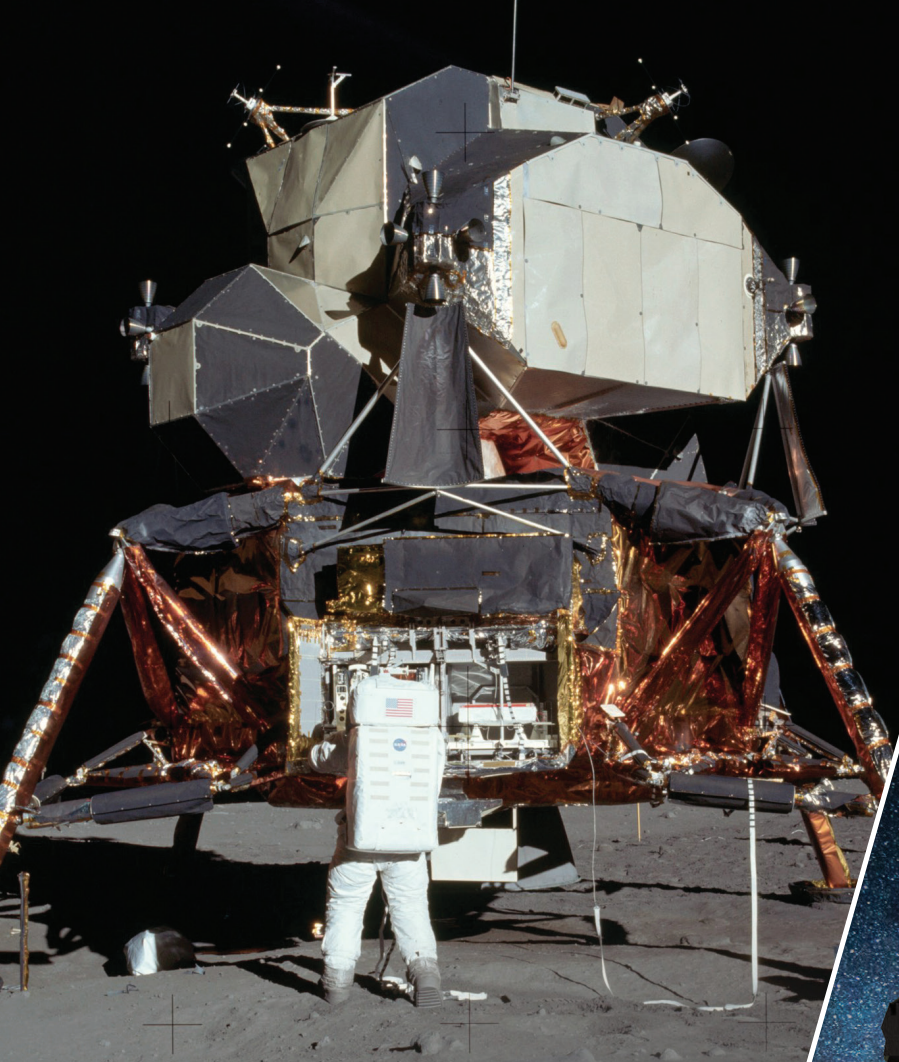

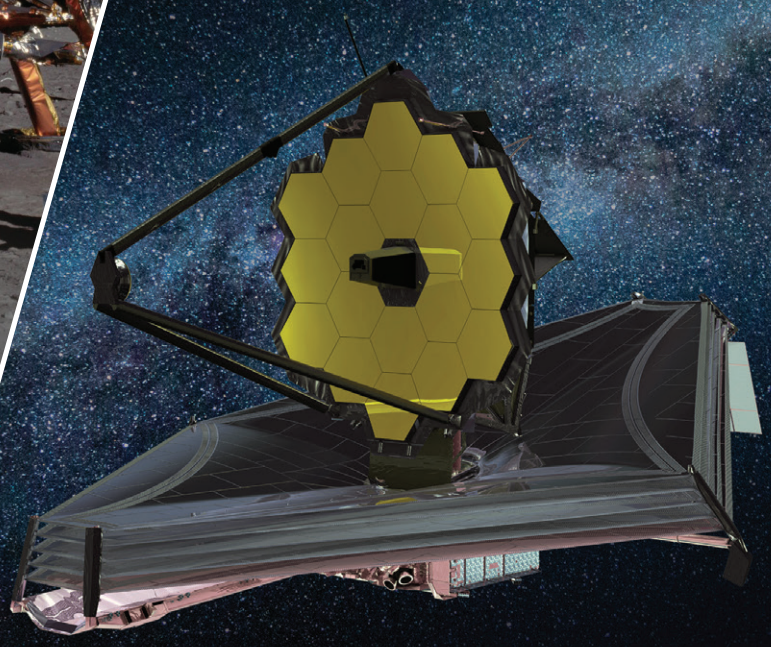

FROM DOING THE IMPOSSIBLE

TO ENDLESS POSSIBILITIES

NORTHROP GRUMMAN

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Contents

1 Welcome Message

Message from IAF Vice President for Technical Activities

On behalf of the IAC International Programme Committee, we warmly welcome you to the 70th International Astronautical Congress in the beautiful city of Washington D.C.

The year 2019 is very special to the IAC. This is the 70th anniversary of the IAC, and the congress also provides us with the opportunity to celebrate the 50th anniversary of a feat once thought impossible: humans walking on the moon. The congress theme, *"Space: The Power of the Past, the Promise of the Future"*, has been carefully chosen to mark such a milestone of our society. We are privileged to be part of this important congress.

Over the last 70 years, the IAC Community has made tremendous contributions in research, teaching and practice, resulting in impacts in many sectors connected to space. At the congress let us celebrate what we, as a space community, have achieved. Additionally, our future vision is to create even greater value to all corners of the globe. This congress will be one for us to share our thoughts and exchange ideas on how to chart our journey forward to reach new heights. We have an exciting Technical Programme at this congress that will allow delegates to reflect upon and celebrate our past accomplishments, renew friendships and extend our networks, and jointly explore current and future research directions. The five-day Technical Programme will feature over 180 Technical Sessions, 19 Special Sessions selected out of a record number of 80 proposals, 33 Keynotes, more than 2,200 Oral Presentations and 360 Interactive Presentations, and valuable networking time.

To put a congress of this magnitude together is not a small task. To that end, we would like to extend our deepest appreciation to the Keynote Speakers, Special Sessions Organizers and Speakers, the entire International Programme Committee, the Steering Group Committee, the Local Organizing Committee and the IAF Secretariat. The Technical Programme could not achieve its success without their efforts, hard work, and commitment to excellence.

Lastly, we would like to thank all of the congress participants for their contributions which are the foundation of this congress. We hope that you will have a productive and fun-filled time at this very special IAC.

S. SOMANATH
IAF Vice-President, Technical Activities

2 Information

2.1 Information for Authors

All authors are asked to upload their manuscripts and multimedia presentations prior to the Congress in order to make them available to all participants on the online Proceedings of the 70th IAC. You can still update your manuscripts through the IAF platform: www.iafastro.net and multimedia presentations with the latest developments in the Speaker Preparation Room.

Your presentation will be automatically preloaded on the computer in the Technical Session Room. Please note that speakers are not allowed to insert USB memory sticks into the computers in the Technical Session rooms. Therefore, all updates need to be uploaded before the Technical Session takes place.

Our help desk team will assist you in uploading presentations during operating hours. Speakers are requested to report to their allocated Technical Session room 20 minutes prior to the start of their session to meet with their Session Chair and to check their presentation. Do not forget to bring two printed courtesy copies of your manuscript and a backup-copy of your presentation. Some Session Chairs might also ask you for a short biography to introduce you at the session.

2.2 Congress Proceedings

The IAC 2019 proceedings are available on a password protected site.

The Congress participants will be provided on Monday 21 October with a link and online password to login and access the congress proceedings.

If you did not receive the password, please contact: support@iafastro.org.

Please note: the congress proceedings contain only those papers that were submitted for publication by congress presenters and may not contain all papers presented at the congress.

IAC papers will be indexed in the largest cited reference enhanced multidisciplinary databases: Elsevier's SCOPUS and Compendex.

2.3 Speaker Preparation Room

Location: The Walter E. Washington Convention Center - Salon I

Authors who missed the deadline for presentation submission (14 October) or who wish to update/review their presentation can do so in the Speaker Preparation Room.

Authors are required to bring a back-up copy of their presentation on a USB Memory Stick. Video content should be saved as separate files.

Opening hours:
Sunday 20 October, 14:00-18:00
Monday 21 October - Thursday 24 October, 08:30-18:00
Friday 25 October, 08:30-13:00

2.4 IAF App

The full Technical Programme is also incorporated within the IAF App, which will make it easier to follow the entire content and enable you to best plan your participation and choose the events from the Technical Programme to attend.

2.5 Certificates of Attendance and Presentation

Certificates of Attendance and Presentation are available on request at the IAF Secretariat Office (Salon H). Claims of hours of applicability toward professional education requirements are the responsibility of the participant.

2.6 AD ASTRA - IAC Special Issue

The IAC Special Issue is prepared together with our IAF Alliance Partner - the Chinese Society of Astronautics (CSA). The issue consists of selected papers of Interactive Presentations and is distributed at the International Astronautical Congress. Our vision is to create a high-quality Special Issue that will be relevant, challenging, thought-provoking, and inclusive of a diverse range of voice sand perspectives, including academic researchers and scholars, policy-makers, and students.

2.7 Acta Astronautica

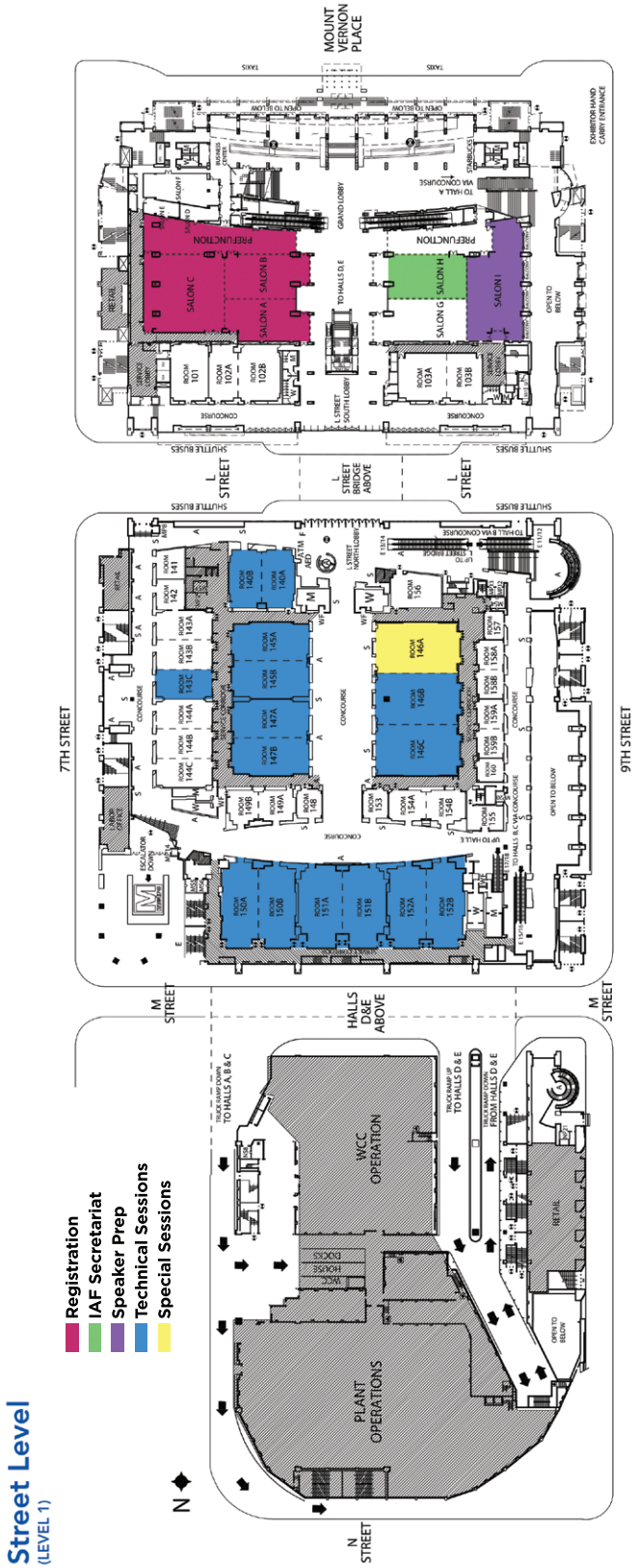
Chairpersons/Rapporteurs of IAC Technical Sessions can preselect from their session a few high quality papers (up to 2 or 3 per session) for inclusion in the peer reviewing as a regular article of the Acta Astronautica (AA) Journal.

Questions about Acta Astronautica can be addressed to the International Academy of Astronautics:
Rock Jeng-Shing Chern, Editor-in-Chief: editor-in-chief@iaamail.org
Eva Yi-Wei Chang, Managing Editor: managing-editor@iaamail.org

2.8 Contact and Support

Technical Sessions: support@iafastro.org
Special Sessions: SpS@iafastro.org
Interactive Presentations: ipsupport@iafastro.org

2.9 Congress Venue Floor Plans



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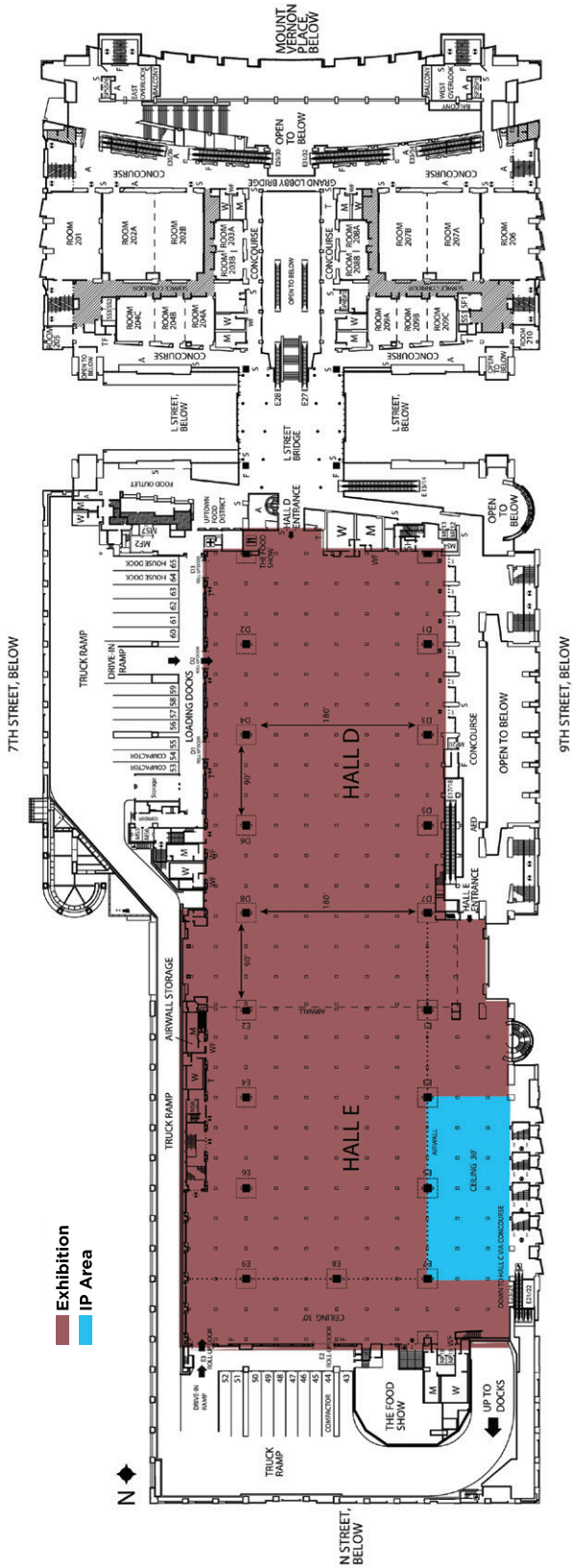

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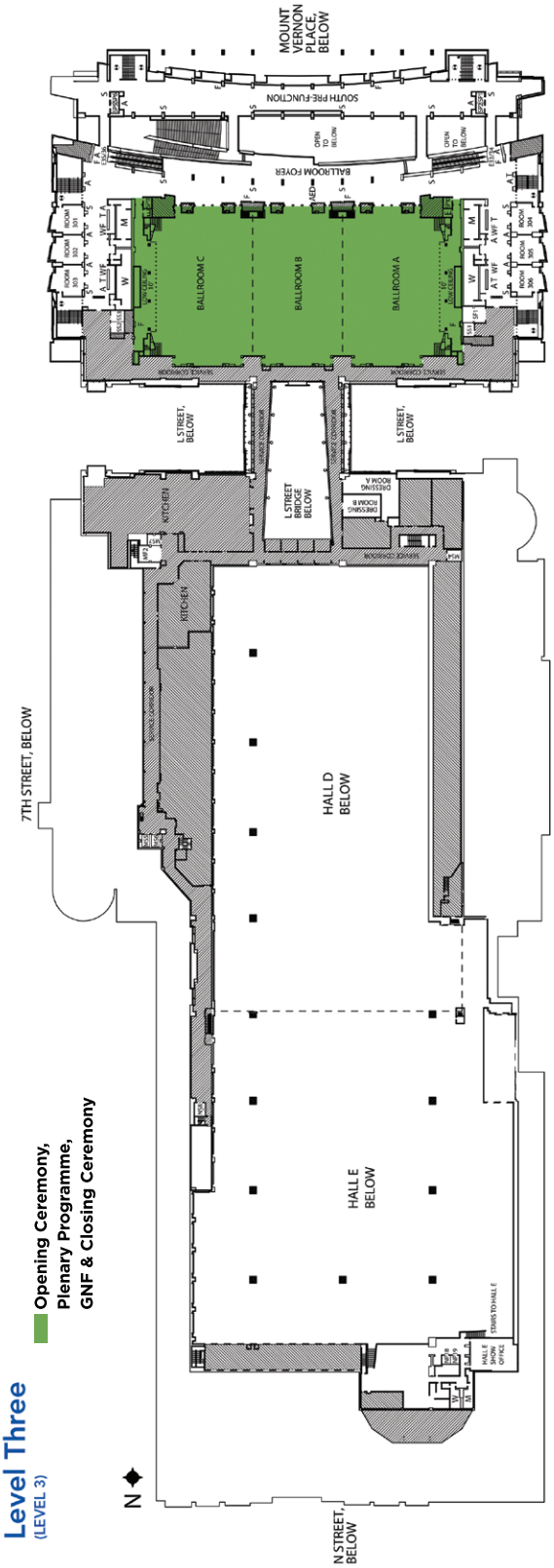


Date	21/10/2019	22/10/2019	22/10/2019	23/10/2019	23/10/2019	24/10/2019	24/10/2019	25/10/2019	25/10/2019
Time / Room Number	15:00-18:00	09:45-12:45	14:45-17:45	09:45-12:45	14:45-17:45	09:45-12:45	14:45-17:45	09:45-12:45	13:30-16:30
146B	A3.1	A3.2A	A3.2B	A3.3A	A3.3B	A3.4A	A3.5	A3.2C	A3.4B
146C	D2.1	D2.2	D2.3	D2.4	D2.5	D2.6	D2.7	D2.8 / A5.4	D2.9 / D6.2
150A	C1.1	C1.2	C1.3	C1.4	C1.5	C1.6	C1.7	C1.8	C1.9
150B	A6.1	A6.2	A6.3	A6.4	A6.5	A6.6	A6.7	A6.8	A6.9
151A	B3.1	B3.2	B3.3	B3.4 / B6.4	B3.5	B3.6 / A5.3	B3.7	A6.10 / B4.10	
151B	B4.2	B4.1	B4.3	B4.4	B4.5	B4.6A	B4.7	B4.8	B4.6B
152A	B5.1	E7.1	E7.2	E7.3	E7.4	E6.3		E7.5	E7.7
152B	C2.1	C2.2	C2.3	C2.4	C2.5	C2.6	C2.7	C2.8	C2.9
143A	C4.1	C4.3	C4.5	C4.2	C4.6	C4.7 / C3.5	C4.8 / B4.5A	C4.9	C4.10
143B	A1.1	A1.2	A1.3	C4.4	A1.4	A1.5	A1.6	A1.7	A1.8
143C	A2.1	A4.1	A4.2	A2.2	A2.3	A2.4	A2.5	A2.6	A2.7
145B	D1.1	D1.2	D1.3	A5.1	A5.2	D1.4A	D1.4B	D1.5	D1.6
147A	B1.1	C3.1	C3.2	B1.2	B1.3	B1.4	C3.3	C3.4	B1.5
144A	A7.1	E3.1	A7.2	E3.2	A7.3	E3.3	E3.4	E6.4	E3.6
145A	E5.1A	D5.1	E5.2	D5.2	E5.3	D5.3	E5.4	D5.4	E5.1B / E5.5
147B	E4.1	B2.8 / GTS.3	E6.1	E2.3 / GTS.4	E4.2	B4.9 / GTS.5	E4.3	B3.8 / GTS.2	E6.5 / GTS.1
144C	E1.1	E1.2	E1.3	E1.4	E1.5	E1.6	E1.7	B1.6	E1.9
144B	D4.1	D4.2	D4.3	D3.1	D3.2A	D4.4	D4.5	D3.2B	D3.4
140B	B6.2	E2.1	E2.2	E6.2	E2.4	B5.2	B6.3	B6.1	B5.3
140A	B2.1	D6.1	B2.2	B2.3	B2.4	B2.5	B2.6	B2.7	D6.3
ISZ	Not available							E1.8	
153						E.3.5 / E7.6			

Category A: Science & Exploration — A1--> A7

Category B: Applications & Operations — B1--> B6

Category C: Technology — C1--> C4

Category D: Infrastructure — D1--> D6

Category E: Space & Society — E1--> E8

TS

3.2 Technical Sessions per Day

Monday, 21 October 2019

15:00 Technical Sessions

No.	Title	Room
A1.1	Behaviour, Performance and Psychosocial Issues in Space	143B
A2.1	Gravity and Fundamental Physics	143C
A3.1	Space Exploration Overview	146B
A6.1	Space Debris Detection, Tracking and Characterization	150B
A7.1	Space Agency Strategies and Plans	144A
B1.1	International Cooperation in Earth Observation Missions	147A
B2.1	Advanced Technologies for Space Communications	140A
B3.1	Governmental Human Spaceflight Programs (Overview)	151A
B4.2	Small Space Science Missions	151B
B5.1	Tools and Technology in Support of Integrated Applications	152A
B6.2	New Space Operations Concepts and Advanced Systems	140B
C1.1	Mission Design, Operations & Optimization (1)	150A
C2.1	Space Structures I - Development and Verification (Space Vehicles and Components)	152B
C4.1	Propulsion System (1)	143A
D1.1	Innovative and Visionary Space Systems	145B
D2.1	Launch Vehicles in Service or in Development	146C
D4.1	Innovative Concepts and Technologies	144B
E1.1	Ignition - Primary Space Education	144C
E4.1	Memoirs, Organizational, Scientific and Technical Histories	147B
E5.1A	Space Architecture: Habitats, Habitability, and Bases	145A

Tuesday, 22 October 2019

09:45 Technical Sessions

No.	Title	Room
A1.2	Human Physiology in Space	143B
A3.2A	Moon Exploration – Part 1	146B
A4.1	SETI 1: SETI Science and Technology	143C
A6.2	Modelling and Risk Analysis	150B
B2.8-GTS.3	Space Communications and Navigation Global Technical Session	147B
B3.2	Commercial Human Spaceflight Programs	151A
B4.1	20th Workshop on Small Satellite Programmes at the Service of Developing Countries	151B
C1.2	Mission Design, Operations & Optimization (2)	150A
C2.2	Space Structures II - Development and Verification (Deployable and Dimensionally Stable Structures)	152B
C3.1	Solar Power Satellite	147A
C4.3	Propulsion Technology (1)	143A
D1.2	Space Systems Architectures	145B

No.	Title	Room
D2.2	Launch Services, Missions, Operations, and Facilities	146C
D4.2	Contribution of Space Activities to Solving Global Societal Issues	144B
D5.1	Quality and safety, a challenge for traditional and new space	145A
D6.1	Commercial Spaceflight Safety and Emerging Issues	140A
E1.2	Lift Off - Secondary Space Education	144C
E2.1	Student Conference - Part 1	140B
E3.1	International cooperation in using space for sustainable development: Towards a “Space2030” agenda	144A
E7.1	Dr. Jasentuliyana Keynote lecture by a leading space law expert and IISL Young Scholars session	152A

14:45 Technical Sessions

No.	Title	Room
A1.3	Medical Care for Humans in Space	143B
A3.2B	Moon Exploration – Part 2	146B
A4.2	SETI 2: SETI and Society	143C
A6.3	Impact-Induced Mission Effects and Risk Assessments	150B
A7.2	Science Goals and Drivers for Future Exoplanet, Space Astronomy, Physics, and Outer Solar System Science Missions	144A
B2.2	Advanced Space Communications and Navigation Systems	140A
B3.3	Utilization & Exploitation of Human Spaceflight Systems	151A
B4.3	Small Satellite Operations	151B
C1.3	Orbital Dynamics (1)	150A
C2.3	Space Structures - Dynamics and Microdynamics	152B
C3.2	Wireless Power Transmission Technologies and Application	147A
C4.5	Propulsion Technology (2)	143A
D1.3	Technologies to Enable Space Systems	145B
D2.3	Upper Stages, Space Transfer, Entry and Landing Systems	146C
D4.3	Space Elevator Critical Technology Verification and Validation Testing	144B
E1.3	On Track - Undergraduate Space Education	144C
E2.2	Student Conference - Part 2	140B
E5.2	Is Space R&D Truly Fostering A Better World For Our Future?	145A
E6.1	Entrepreneurship and Innovation: The Practitioners’ Perspectives	147B
E7.2	Dispute Settlement in Space Law: Are We Ready for the Commercial Challenge?	152A

Wednesday, 23 October 2019

09:45 Technical Sessions

No.	Title	Room
A2.2	Fluid and Materials Sciences	143C
A3.3A	Mars Exploration – missions current and future	146B
A5.1	Human Exploration of the Moon and Cislunar Space	145B
A6.4	Mitigation - Tools, Techniques and Challenges	150B
B1.2	Future Earth Observation Systems	147A

No.	Title	Room
B2.3	Fixed and Broadcast Communications	140A
B3.4-B6.4	Flight & Ground Operations of HSF Systems - Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia)	151A
B4.4	Small Earth Observation Missions	151B
C1.4	Orbital Dynamics (2)	150A
C2.4	Advanced Materials and Structures for High Temperature Applications	152B
C4.2	Propulsion System (2)	143A
C4.4	Electric Propulsion	143B
D2.4	Future Space Transportation Systems	146C
D3.1	Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development	144B
D5.2	Knowledge management for space activities in the digital era	145A
E1.4	In Orbit - Postgraduate Space Education	144C
E2.3-GTS.4	Student Team Competition	147B
E3.2	50 years after Apollo 11: The future of space exploration and innovation	144A
E6.2	Finance and Investment: The Practitioners' Perspectives	152A
E7.3	National Space Legislation – Harmonisation and Enforcement	152A

14:45 Technical Sessions

No.	Title	Room
A1.4	Medicine in Space and Extreme Environments	143B
A2.3	Microgravity Experiments from Sub-Orbital to Orbital Platforms	143C
A3.3B	Mars Exploration – Science, Instruments and Technologies	146B
A5.2	Human Exploration of Mars	145B
A6.5	Post Mission Disposal and Space Debris Removal (1)	150B
A7.3	Technology Needs for Future Missions, Systems, and Instruments	144A
B1.3	Earth Observation Sensors and Technology	147A
B2.4	Mobile Satellite Communications and Navigation Technology	140A
B3.5	Astronaut Training, Accommodation, and Operations in Space	151A
B4.5	Access to Space for Small Satellite Missions	151B
C1.5	Attitude Dynamics (1)	150A
C2.5	Advancements in Materials Applications and Rapid Prototyping	152B
C4.6	New Missions Enabled by New Propulsion Technology and Systems	143A
D2.5	Technologies for Future Space Transportation Systems	146C
D3.2A	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Systems	144B
E1.5	Enabling the Future - Developing the Space Workforce	144C
E2.4	Educational Pico and Nano Satellites	140B
E4.2	History of US Contribution to Astronautics Post WWII	147B
E5.3	Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach	145A
E7.4	Space Traffic Management: From Space Situational Awareness and Space Surveillance and Tracking to developing Rules of the Road	152A

Thursday, 24 October 2019

09:45 Technical Sessions

No.	Title	Room
A1.5	Radiation Fields, Effects and Risks in Human Space Missions	143B
A2.4	Science Results from Ground Based Research	143C
A3.4A	Small Bodies Missions and Technologies (Part 1)	146B
A5.3-B3.6	Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia	151A
A6.6	Post Mission Disposal and Space Debris Removal (2)	150B
B1.4	Earth Observation Data Management Systems	147A
B2.5	Advanced Satellite Services	140A
B4.6A	Generic Technologies for Small/Micro Platforms	151B
B4.9-GTS.5	Small Satellite Missions Global Technical Session	147B
B5.2	Integrated Applications End-to-End Solutions	140B
C1.6	Attitude Dynamics (2)	150A
C2.6	Space Environmental Effects and Spacecraft Protection	152B
C3.5-C4.7	Joint Session on Advanced and Nuclear Power and Propulsion Systems	143A
D1.4A	Space Systems Engineering - Methods, Processes and Tools (1)	145B
D2.6	Future Space Transportation Systems Verification and In-Flight Experimentation	146C
D4.4	Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond	144B
D5.3	Space Environment and effects on space missions	145A
E1.6	Calling Planet Earth - Space Outreach to the General Public	144C
E3.3	Space Economics from Apollo to Tomorrow	144A
E3.5-E7.6	34th IAA / IISL Scientific-Legal Roundtable: Mega Constellations and Microsatellites: challenges, including registration and liability	153
E6.3	Innovation: The Academics' Perspectives	152A

13:15 Technical Sessions

No.	Title	Room
A1	Interactive Presentations - IAF/IAA Space Life Sciences Symposium	IP Area
A2	Interactive Presentations - IAF Microgravity Sciences snd Processes Symposium	IP Area
A3	Interactive Presentations - IAF Space Exploration Symposium	IP Area
A4	Interactive Presentations - 48th IAA Symposium on the Search for Extraterrestrial Intelligence (SETI) – The Next Steps	IP Area
A5	Interactive Presentations - 22nd IAA Symposium on Human Exploration of the Solar System	IP Area
A6	Interactive Presentations - 17th IAA Symposium on Space Debris	IP Area
A7	Interactive Presentations - IAF Symposium on Future Space Astronomy and Solar-System Science Missions	IP Area
B1	Interactive Presentations - IAF Earth Observation Symposium	IP Area
B2	Interactive Presentations - IAF Space Communications and Navigation Symposium	IP Area
B3	Interactive Presentations - IAF Human Spaceflight Symposium	IP Area
B4	Interactive Presentations - 26th IAA Symposium on Small Satellite Missions	IP Area
B6	Interactive Presentations - IAF Space Operations Symposium	IP Area
C1	Interactive Presentations - IAF Astrodynamics Symposium	IP Area
C2	Interactive Presentations - IAF Materials and Structures Symposium	IP Area
C3	Interactive Presentations - IAF Space Power Symposium	IP Area

No.	Title	Room
C4	Interactive Presentations - IAF SPACE PROPULSION SYMPOSIUM	IP Area
D1	Interactive Presentations - IAF Space Systems Symposium	IP Area
D2	Interactive Presentations - IAF Space Transportation Solutions and Innovations Symposium	IP Area
D3	Interactive Presentations - 17th IAA Symposium on Building Blocks for Future Space Exploration and Development	IP Area
D4	Interactive Presentations - 17th IAA Symposium on Visions and Strategies for the Future	IP Area
D5	Interactive Presentations - 52nd IAA Symposium on Safety, Quality and Knowledge Management in Space Activities	IP Area
E1	Interactive Presentations - IAF Space Education and Outreach Symposium	IP Area
E3	Interactive Presentations - 32nd IAA Symposium on Space Policy, Regulations and Economics	IP Area
E5	Interactive Presentations - 30th IAA Symposium on Space and Society	IP Area
E6	Interactive Presentations - IAF Business Innovation Symposium	IP Area
E7	Interactive Presentations - IISL Colloquium on The Law of Outer Space	IP Area

14:45 Technical Sessions

No.	Title	Room
A1.6	Astrobiology and Exploration	143B
A2.5	Facilities and Operations of Microgravity Experiments	143C
A3.5	Solar System Exploration including Ocean Worlds	146B
A6.7	Operations in Space Debris Environment, Situational Awareness	150B
B2.6	Space-Based Navigation Systems and Services	140A
B3.7	Advanced Systems, Technologies, and Innovations for Human Spaceflight	151A
B4.7	Constellations and Distributed Systems	151B
B6.3	Mission Operations, Validation, Simulation and Training	140B
C1.7	Guidance, Navigation & Control (1)	150A
C2.7	Space Vehicles – Mechanical/Robotic/Thermal/Fluidic Systems	152B
C3.3	Advanced Space Power Technologies	147A
C4.8-B4.5A	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	143A
D1.4B	Space Systems Engineering - Methods, Processes and Tools (2)	145B
D2.7	Small Launchers: Concepts and Operations	146C
D4.5	Space Resources: Technologies, Systems, Missions and Policies	144B
E1.7	New Worlds - Non-Traditional Space Education and Outreach	144C
E3.4	Assuring a Safe, Secure and Sustainable Environment for Space Activities	144A
E4.3	"Can you believe they put a man on the moon?" The Apollo Program.	147B
E5.4	Space Assets and Disaster Management	145A

Friday, 25 October 2019

09:45 Technical Sessions

No.	Title	Room
A1.7	Life Support, habitats and EVA Systems	143B
A2.6	Life and Microgravity Sciences on board ISS and beyond (Part I)	143C
A3.2C	Moon Exploration – Part 3	146B
A5.4-D2.8	Space Transportation Solutions for Deep Space Missions	146C

No.	Title	Room
A6.10-B4.10	Joint Small Satellite/Space Debris Session to Promote the Long-Term Sustainability of Space	151A
A6.8	Policy, Legal, Institutional and Economic Aspects of Space Debris Detection, Mitigation and Removal (Joint Session with IAF Space Security Committee)	150B
B1.6	50 years of Earth observation: The contribution to sustainable development goals and plans for the future	144C
B2.7	Near-Earth and Interplanetary Communications	140A
B3.8-GTS.2	Human Spaceflight Global Technical Session	147B
B4.8	Small Spacecraft for Deep-Space Exploration	151B
B6.1	Ground Operations - Systems and Solutions	140B
C1.8	Guidance, Navigation & Control (2)	150A
C2.8	Specialised Technologies, Including Nanotechnology	152B
C3.4	Space Power System for Ambitious Missions	147A
C4.9	Hypersonic Air-breathing and Combined Cycle Propulsion	143A
D1.5	Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards.	145B
D3.2B	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies	144B
D5.4	Cyber-security threats to space missions and countermeasures to address them	145A
E1.8	Hands-on Space Education and Outreach	ISZ
E6.4	Strategic Risk Management for Successful Space & Defence Programmes	152A
E7.5	Space Mining: National Authority? International Authority? Both?	152A

13:30 Technical Sessions

No.	Title	Room
A1.8	Biology in Space	143B
A2.7	Life and Microgravity Sciences on board ISS and beyond (Part II)	143C
A3.4B	Small Bodies Missions and Technologies (Part 2)	146B
A6.9	Orbit Determination and Propagation	150B
B1.5	Earth Observation Applications, Societal Challenges and Economic Benefits	147A
B4.6B	Generic Technologies for Nano/Pico Platforms	151B
B5.3	Satellite Commercial Applications	140B
C1.9	Guidance, Navigation & Control (3)	150A
C2.9	Smart Materials and Adaptive Structures	152B
C4.10	Propulsion Technology (3)	143A
D1.6	Cooperative and Robotic Space Systems	145B
D2.9-D6.2	The Apollo program and the rockets that took humanity to the moon	146C
D3.4	Space Technology and System Management Practices and Tools	144B
D6.3	Enabling safe commercial spaceflight: vehicles and spaceports	140A
E1.9	Space Culture – Public Engagement in Space through Culture	144C
E3.6	Economics of Procurement in Space Contracting	144A
E5.1B	Space Architecture: Habitats, Habitability, and Bases	145A
E6.5-GTS.1	Entrepreneurship Around the World	147B
E7.7	Remediation of Space Debris: A Fundamental Legal Challenge?	152A

15:00 Technical Sessions

No.	Title	Room
E5.5	Sharing space achievements and heritage: space museums and societies	145A

4 Keynote Speakers

Keynotes

Monday 21 October

A3.	IAF SPACE EXPLORATION SYMPOSIUM	Date	Time	Room

Session: 1 – Space Exploration Overview | 2019-10-21 | 15:00 | 146B

James Green
Chief Scientist,
National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: NASA Science under the National Space Exploration Campaign

Abstract
With the signing of Space Policy Directive-1 (SPD-1) in December of 2017, NASA was directed to explore "across the solar system and to bring back to Earth new knowledge and opportunities." Charged to lead an expanded, sustainable program of human exploration with international and commercial partners, NASA's response to SPD-1 was to develop the National Space Exploration Campaign, which serves as a roadmap of plans to expand human activities in LEO and presence to the moon, to Mars, and to deep space. The campaign has five strategic objectives. This paper will provide an overview of NASA's scientific activities currently underway to support these objectives, including how various programs are aligned to promote collaboration for successful scientific outcomes. Future potential scientific trajectories within the agency will also be discussed.

Biography
Dr. James Green is the NASA Chief Scientist. He received his Ph.D. in Space Physics in 1979 and began working at NASA, where he developed and managed NASA's first Internet, the Space Physics Analysis Network. His positions at NASA include serving as head of the National Space Science Data Center at Goddard Space Flight Center, Chief of the Space Science Data Operations Office, and Chief of the Science Proposal Support Office. From August 2006 to April 2018, James was the Director of the Planetary Science Division at NASA Headquarters. Under his leadership, more than a dozen planetary missions have been successfully executed.

B1.	IAF EARTH OBSERVATION SYMPOSIUM	Date	Time	Room

Session: 1 – International Cooperation in Earth Observation Missions | 2019-10-21 | 15:00 | 147A

D.K. Das
Director, Space Applications Centre,
Indian Space Research Organisation (ISRO),
India

KEYNOTE: Committee on Earth Observation Satellites (CEOS): 2019 Report of Activities to the International Astronautical Congress

Abstract
As the CEOS Chair, The Indian Space Research Organisation (ISRO) will provide an overview of the ongoing activities of CEOS. This presentation will deepen awareness of and support for its Earth observation missions, data, and activities, their global relevance and benefits. ISRO will describe key initiatives undertaken in 2019 by the CEOS Chair and CEOS Strategic Implementation Team and other highlights of the CEOS organization. CEOS ensures international coordination of civil space-based Earth observation programs and promotes exchange of data to optimize societal benefit and inform decision making for securing a prosperous and sustainable future for humankind. CEOS currently encompasses 62 Agencies operating 170 satellites.

Biography
Shri D K Das is a graduate in Electronics Engineering. He started his career at ISRO in 1983 in the area of Communication & Navigation Satellite technology. He made an outstanding contribution towards Assembly, Integration and Checkout of over 30 payloads for INSAT/GSAT satellites. As an Associate Programme Director he has led many Communication Satellite Payload, such as the constellation of NavIC, Satcom and Navigation Payload Area. Since July 2018, he is designated as Director, Space Applications Centre. He is a recipient of ISRO-ASI for his contribution in the area of Spacecraft, ISRO Merit Award and ISRO Performance Excellence Award.

B3.	IAF HUMAN SPACEFLIGHT SYMPOSIUM	Date	Time	Room

Session: 1 – Governmental Human Spaceflight Programs (Overview) | 2019-10-21 | 15:00 | 151A

Kenneth Bowersox
Acting Associate Administrator for Human Exploration and Operations,
National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: NASA's Moon to Mars Exploration Plans

Abstract
Building on 60 years of exploration experience, NASA will push the boundaries of human exploration forward to the Moon and on to Mars. NASA is working to establish a permanent human presence on the Moon within the next decade to uncover new scientific discoveries and lay the foundation for private companies to build a lunar economy. This paper will examine how NASA will 1) get to the Moon using the Space Launch System (SLS) rocket and Orion spacecraft, 2) build the Gateway in orbit around the Moon and demonstrate its capabilities in space 3) begin to develop increasingly larger, and reusable landers for humans 4) use the Moon's unique science platform to advance our understanding of our home planet and our solar system, and 5) advance technologies that will prepare humanity for future exploration to Mars. With the work underway, the agency will move deeper into the solar system with its partners to achieve the ambitious exploration goals.

Biography
Ken Bowersox is a retired US Naval Aviator, with 19 years of experience at NASA. Selected to the astronaut corps in 1987, during his five missions, Bowersox has logged over 211 days in space aboard the International Space Station, where he was the mission commander of the 6th expedition. He was also a crew member for the first two Hubble Space Telescope repair flights and two US Microgravity Laboratory flights. He served as the director of the Johnson Space Center's Flight Crew Operations Directorate. From 2009-2011, Bowersox was the VP of Astronaut Safety and Mission Assurance at SpaceX. In February 2019 Ken was appointed as the Deputy Associate Administrator for the Human Exploration and Operations Mission Directorate.

C4.	IAF SPACE PROPULSION SYMPOSIUM	Date	Time	Room

Session: 1 – Propulsion System (1) | 2019-10-21 | 15:00 | 143A

Jérôme Breteau
Head of Future Space Transportation,
European Space Agency (ESA),
France

KEYNOTE: Prometheus: Precursor of Low-cost Rocket Engine

Abstract
Prometheus is the precursor of a new liquid rocket Engine family designed for low-cost, flexibility and reusability. The aim of Prometheus project is to design, produce, and test an advanced low-cost 100-tons class LOx/LCH4 reusable Engine in Europe. This Engine, designed for 1M€ recurrent cost, targets also flexibility in operation through variable thrust, multiple ignitions, compatibility to main and upper stage operation, and minimized ground operations before and after flight. The speakers will focus on Program genesis, programmatic aspects such as Participating States motivations, Industrial Team, organization, demonstration objectives and present shortly the status of activities, and will give the perspective for the applications and some lessons learned.

Biography
Jérôme Breteau is Head of the Future Space Transportation systems preparation team at the Space Transportation Directorate at ESA Headquarters in Paris. He graduated in Aeronautics and Space propulsion in 1991 from Ecole Nationale Supérieure de l'Aéronautique et de l'Espace (ENSAE) in France. He joined the European Space Agency as propulsion engineer in 2005 in the Future Launchers Preparatory Programme of the Launcher Directorate, becoming Propulsion Manager in 2009 and Programme Manager in 2013 along with the development of this programme.

D2.	IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM	Date	Time	Room

Session: 1 – Launch Vehicles in Service or in Development | 2019-10-21 | 15:00 | 146C

Gary Henry
Senior Director of National Security Space Solutions,
SpaceX,
United States

KEYNOTE: Falcon Launch Vehicle Lessons Learned and Reusability

Abstract
Gary Henry will discuss the status and progress of the Falcon 9 and Falcon Heavy vehicles, with emphasis on some of the key lessons learned from flying boosters multiple times.

Biography
Gary Henry joined SpaceX in February 2019 as senior director of National Security Space Solutions. Prior to joining SpaceX in 2019, Gary was Senior Director at Phantom Works Space Systems. His responsibilities included transitioning research and development programs into operational prototypes and objective capabilities for space and other special missions. Prior to joining Boeing, Gary served for 27 years of active duty service with the United States Air Force, as the commander, Launch and Range Systems Wing, responsible for the execution and operation of the Evolved Expendable Launch Vehicle and Launch & Test Range programs for the USAF Space and Missile Systems Center in his final assignment.

E1.	IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM	Date	Time	Room

Session: 1 – Ignition – Primary Space Education | 2019-10-21 | 15:00 | 144C

Denise Kopecky
Vice President of Education,
Challenger Center for Space Science Education,
United States

KEYNOTE: STEM Education: Lessons learned from the Challenger Center

Abstract
Today's students are tomorrow's innovators, but too many lose interest in STEM subjects at an early age. This limits their academic achievement in these subjects and ultimately, their opportunities in life. Low engagement in STEM also has an impact on our society's economic and social well-being. Challenger Center is on a mission to broaden the pipeline of students that are interested and prepared to fill the jobs of tomorrow. Ms. Kopecky will discuss the importance of STEM in elementary school and provide hands-on, practical ways for experts to connect students to real-world STEM experiences.

Biography
Denise Kopecky leads Challenger Center's team of education and technology experts whose work is at the core of the organization's STEM education mission. She oversees the development and implementation of all education products and programs, and manages relationships with program collaborators. Ms. Kopecky is a member of the Senior Leadership team, providing direction on all strategic and operational issues to ensure to meet Challenger Center's strategic goals. Ms. Kopecky spent 13 years in the classroom. Ms. Kopecky holds a professional certification in Instructional Design from University of Wisconsin-Stout, as well as a Bachelor of Science in Psychology, and a Master of Teaching from Virginia Commonwealth University.

Tuesday 22 October

A3.	IAF SPACE EXPLORATION SYMPOSIUM	Date	Time	Room
	**Session: 2A –** Moon Exploration – Part 1	2019-10-22	09:45	146B

Steve Clarke
Deputy Associate Administrator for Exploration,
Science Mission Directorate,
National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: An Overview of NASA's Lunar Science Exploration Plans for Artemis

Abstract
An overview of NASA's lunar science exploration activities in support of the new Artemis program. This includes the Commercial Lunar Payload Services, NASA lunar instruments, and the lunar polar volatiles prospector rover mission being planned for the 2022-23 timeframe – goals, objectives, and current status.

Biography
Steve Clarke is the Deputy Associate Administrator for Exploration in NASA's Science Mission Directorate. He serves as the agency's interface between the NASA mission directorates, the scientific community, and other external stakeholders in developing a strategy to enable an integrated approach for robotic and human exploration within NASA's Exploration Campaign. Mr. Clarke has received numerous awards including the Presidential Rank Award and NASA's Exceptional Achievement Medal for outstanding leadership. He has a BS degree in engineering and a MS degree in engineering management from the University of Central Florida.

C4.	IAF SPACE PROPULSION SYMPOSIUM	Date	Time	Room
	**Session: 3** – Propulsion Technology (1)	2019-10-22	09:45	143A

George Schmidt
Head of Propulsion,
Glenn Research Center,
National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: Propulsion Technology Development Activities at NASA

Abstract
This presentation will provide an overview of all the current propulsion technology development activities taking place at NASA. It will cover all the work being performed at the principal NASA field centers responsible for propulsion system research and development for space applications, particularly Glenn Research Center and Marshall Space Flight Center. The technologies that will be addressed include chemical propulsion using cryogenic propellants, nuclear thermal propulsion and electric propulsion. The presentation will also describe current work in developing technologies to enable extraction, processing and utilization of lunar and extraterrestrial resources for propellant. In addition to outlining the current NASA projects focused on NASA technology, the presentation will also address the key challenges associated with the development of these technologies, especially at the component and subsystem level.

Biography
George Schmidt is the Chief Technologist of the NASA Glenn Research Center. He is also the Deputy Director of Glenn's Research and Technology Directorate, which conducts a broad range of research and technology development projects in space propulsion, aeropropulsion, power, communications, materials and structures, instrumentation and physical sciences. Prior to this assignment, he served as Manager of the Propulsion Research Center at Marshall Space Flight Center and as Deputy Manager of Marshall's Test Laboratory. Dr. Schmidt spent several years at NASA Headquarters and started his NASA career in 1989. Prior to that, he worked at Booz-Allen & Hamilton and Boeing Aerospace.

D1.	IAF SPACE SYSTEMS SYMPOSIUM	Date	Time	Room

Session: 2 – Space Systems Architectures | 2019-10-22 | 09:45 | 145B

Rolf Janovsky
Director Predevelopment, Space System Studies & Proposals,
OHB System AG,
Germany

KEYNOTE: Mission and Spacecraft Design Challenges of the Sun-Earth L5 Point Lagrange Space Weather Monitoring Mission

Abstract
As part of its SSA Programme, ESA has initiated a study to define an operational system to monitor, predict and disseminate space weather information. It will generate alerts to a wide user community in sectors like space-based communications, human spaceflight, broadcasting, and many others. A key asset will be a space-based observatory, to be placed at the Sun-Earth L5 point. This paper will present an in-depth discussion of the mission and spacecraft design challenges. A distinguishing feature is that it will be the first ever deep-space mission providing an operational service. The resulting implications on the spacecraft design and autonomy will be highlighted in this paper. From a mission point of view, a narrow orbit about the L5 point needs to be established by means of a suitable transfer and manoeuvre strategy. This fixed geometry has several implications on the spacecraft and its subsystems, which will be elaborated in this paper.

Biography
Dr. Rolf Janovsky is currently the Director for Predevelopment, Space System Studies & Proposals of OHB System AG in Bremen, one of the three largest space system integrators in Europe. In his position, he is responsible for mission and spacecraft studies until the transition to the implementation phase, including ESA's future Lagrange Space Weather Mission. Dr. Janovsky has previously headed different future programmes departments at OHB since 2001. Rolf Janovsky has obtained a doctoral degree from RWTH in Aachen, Germany and is also a board member of the German Aerospace Society (DGLR).

E7.	IISL COLLOQUIUM ON THE LAW OF OUTER SPACE	Date	Time	Room

Session: 1 – Dr. Jasentuliyana Keynote lecture by a leading space law expert and IISL Young Scholars session | 2019-10-22 | 09:45 | 152A

Setsuko Aoki
Professor of Law,
Keio University Law School,
Japan

KEYNOTE: International Cooperation Mechanisms in Outer Space Activities for the Next Decade

Abstract
This keynote presents lessons learned from various international space cooperation mechanisms including scientific exploration, space application, commercial activities and security-related activities. Research covers bilateral, multilateral, regional and UN-based cooperative measures. Best practices seem to indicate that bilateral cooperation accomplishes its goals when appropriate implementing arrangements are made based on the already-existed framework agreements, and a big multilateral project would be successful through the combination of a legally binding instrument and several types of non-legally binding instruments. The legally binding instrument in a big project seems to correspond to the implementing arrangement in case of bilateral cooperation mechanisms in nature. This implies that a framework agreement does not yet exist in multilateral exploration project. Thus, this presentation will submit a model framework agreement in a next decade multilateral exploration project as a food for thought to promote faster and facilitated cooperation.

Biography
With an LL.B. (in 1983) and LL.M. (1985) from Faculty of Law and Graduate School of Law at Keio University (Japan) and D.C.L. in Air & Space Law at McGill University (in 1993), Prof. Setsuko Aoki is Professor of Law, Keio University Law School and Vice Director of the Institute of Space Law, Keio University since April 2016. Her previous positions include Professor, Faculty of Policy Management, Keio University and Associate Professor, School of Social Sciences, National Defense Academy of Japan. She is currently a member of Committee on National Space Policy (CNSP) under the Cabinet Office.

D1.	IAF SPACE SYSTEMS SYMPOSIUM	Date	Time	Room

Session: 3 – Technologies to Enable Space Systems | 2019-10-22 | 14:45 | 145B

Mauro Patroncini
Project Manager,
Thales Alenia Space,
Italy

KEYNOTE: BepiColombo – The State of Art for the Exploration of Mercury

Abstract
BepiColombo represents the first European mission to explore the planet Mercury, so far visited only by NASA. With BepiColombo, an Interdisciplinary Mission to the planet Mercury, in collaboration between ESA and ISAS/JAXA of Japan, the ESA's goal is to carry out a complete and systematic mapping of the planet. It might be thought that Mercury has so far been a bit neglected by space explorations because it is less interesting than Mars, Venus or Saturn, already visited by previous scientific ESA missions, but is not so. The reason lies in the fact that Mercury is an extreme difficult planet to explore, due to its extraordinarily hostile environment in terms of thermal radiations, ultraviolet and ionized particles flow. This paper intends to give an overview of the BepiColombo Mission characteristics, objectives, challenges, together with a summary of the technology development and effort that has been required in particular to Thales Alenia Space – Italy, to develop and qualify such complex Satellite.

Biography
Mauro Patroncini, born in Torino – Italy on December 13th, 1958 and graduated in Electronic Engineering at the Politecnico di Torino in 1983. Since 1983 he has been working in Thales Alenia Space in Turin, formerly called Aeritalia then Alenia Spazio, where he has held several positions. In particular, until 2000 he has been responsible for defining Ground Support Equipment and managing the Assembly, Integration and Testing for Hipparcos, Tethered and SAX Satellites. Since 2001 he has been responsible as Thales Alenia Space Project Manager for Mars Express, Venus Express and BepiColombo Scientific satellites.

D4.	17th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE	Date	Time	Room

Session: 3 – Space Elevator Critical Technology Verification and Validation Testing | 2019-10-22 | 14:45 | 144B

Linda Elkins-Tanton
Managing Director and Foundation Professor,
Arizona State University, School of Earth and Space Exploration,
United States

KEYNOTE: The ASU Interplanetary Initiative: Advancing Society Through Exploration

Abstract
Creating a positive human space future necessitates that we connect all disciplines — we need sociology, philosophy, art, and so much more, in addition to science, engineering, and law. The Interplanetary Initiative is a pan-university venture at Arizona State University that is pioneering a new model for integrated research and learning, to investigate, communicate, and define our human space future. We connect the private sector, universities, and government, and we train students how to solve problems and create knowledge both in teams and in the classroom. In our two full years of operation we have created an experimental innovative research team-building process, seed-funded ~20 projects including over 250 active team members and 20 outside partners, and achieved ~10x return on investment in external funding. In this talk I will discuss our structure, process, and opportunities for teaming, and discuss the application of our process to examples including an international space elevator.

Biography
Dr. Lindy Elkins-Tanton is Managing Director and Co-Chair of the Interplanetary Initiative at ASU, co-founder of Beagle Learning, and the Principal Investigator of the Psyche mission, selected in 2017 as the 14th in NASA's Discovery program. Her research includes theory, observation, and experiments concerning terrestrial planetary formation, magma oceans, and subsequent planetary evolution. She promotes and participates in education initiatives, in particular, inquiry and exploration teaching methodologies, and leadership and team-building for scientists and engineers. Professor Elkins-Tanton received her B.S., M.S. and Ph.D. from MIT.

Wednesday 23 October

A3.	IAF SPACE EXPLORATION SYMPOSIUM	Date	Time	Room
	Session: 3A – Mars Exploration – missions current and future	2019-10-23	09:45	146B

Brian Muirhead
Pre-project Manager of MSR,
NASA Jet Propulsion Laboratory (JPL),
United States

KEYNOTE: Mars Sample Return Mission Concept Status

Abstract
This paper will provide an overview of current options and specific concepts for a potential Mars Sample Return (MSR) architecture being jointly studied by NASA and ESA. Overall objectives and mission options will be described, including the architecture's constraints and notional timelines. The paper will highlight architecture-level trade studies, including specific elements and their status. The overall Sample Retrieval Lander (SRL) mission concept, including vehicle options will be described, including the Mars Ascent Vehicle (MAV), Sample Fetch Rover (being studied by ESA), Orbiting Sample container (OS), and tube transfer robotics systems. The concept and status of the Earth Return Orbiter (ERO) mission, being studied by ESA, and the Capture/Containment and Return System (CCRS) which would be the payload on the ERO, will be discussed.

Biography
Brian Muirhead has 40 years of experience in development and leadership of projects at NASA's JPL. He was the flight system manager of the Mars Pathfinder mission. He was the Project Manager of the Deep Impact mission. He was the Chief Engineer of the Mars Science Laboratory until August 2004. He was named Chief Engineer of JPL in 2004. In February, 2007 Brian was named the Program Systems Engineer for the Constellation Program. Brian is currently leading the study of NASA's Mars Sample Return campaign. He is the recipient of two of NASA's Outstanding Leadership Medals for his work on Mars Pathfinder and Constellation.

C1.	IAF ASTRODYNAMICS SYMPOSIUM	Date	Time	Room
	Session: 4 – Orbital Dynamics (2)	2019-10-23	09:45	150A

David C. Folta
Flight Dynamics Engineer,
Goddard Space Flight Center, National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: Astrodynamics of Lunar and Cis-Lunar Missions

Abstract
The Breakwell Memorial Lecture has been given during the IAF Astrodynamics Symposium since1994. This award is attributed to the persons for their outstanding contributions to Astrodynamics. During the 70th IAC, the Breakwell Lecture is delivered by David Folta, an Aerospace Engineer in the Navigation and Mission Design Branch at NASA's Goddard Space Flight Center (GSFC) where he leads multiple NASA missions, chairs engineering review panels, and develops innovative technologies across the full spectrum of mission types.

Biography
Mr. Folta leads flight dynamics support for multiple NASA missions, develops astrodynamics technologies, and collaborates with universities on innovative research. He provides operational navigation and guidance expertise to flight projects, and directs research on topics such as dynamical systems and formation flying for trajectory design applications. He is currently the GSFC Mission Design and Navigation Lead for the Mars mission, MAVEN, the Lunar IceCube mission, and libration orbit missions. Mr. Folta is Chair of the Goddard Senior Fellows. Awards include NASA's premier honor, the Distinguished Service Medal and Goddard's foremost engineering award, the Moe I. Schneebaum Memorial Award.

C2.	IAF MATERIALS AND STRUCTURES SYMPOSIUM	Date	Time	Room

Session: 4 – Advanced Materials and Structures for High Temperature Applications

2019-10-23 | 09:45 | 152B

Ethiraj Venkatapathy
Senior Technologist for the Entry System Technologies,
Ames Research Center, National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: Paolo Santini's Memorial Lecture: Ablators from Apollo to Future Missions to Moon, Mars, and Beyond

Abstract
When Apollo was designed to carry astronauts safely back from the Moon, at return speeds exceeding 11 km/s, it required development of a new lightweight ablative material to protect the capsule and crew from the intense heat of entry. Soon after the Apollo program, successful Mars Viking Lander missions employed a different and much lighter ablator in more benign entry conditions. The Pioneer-Venus and Galileo Probe missions that followed required yet another ablative system, to manage the extreme heating at those destinations. In the mid 1990's, as the Science focus returned to Mars, advances in manufacturing, testing and materials technology led to innovative lightweight ablators that enabled comet and asteroid sample return missions and facilitated large lander missions such as MSL and Mars 2020. This talk will review the history of ablators as well as current ablative TPS development that addresses the requirements for future missions to Moon, Mars and beyond.

Biography
Dr. Ethiraj Venkatapathy is currently NASA's Senior Technologist for the Entry System Technologies. Prior to joining NASA in 2002, was President and Director of Research for ELORET. He obtained his doctorate in Aerospace Engineering from Iowa State University developing computational fluid-dynamics solvers and predicted 3-dimentional hypersonic flow around Space Shuttle Orbiter before first flight. He is a co-inventor and the Principal Technologist for the ADEPT, a deployable entry system and 3-D MAT, a multi-functional TPS material on Orion Capsule. He received from NASA Outstanding Leadership Medal twice and Exceptional Technology Achievement Medal as well. Associate Fellow of NASA and AIAA.

C4.	IAF SPACE PROPULSION SYMPOSIUM	Date	Time	Room

Session: 2 – Propulsion System (2)

2019-10-23 | 09:45 | 143A

Kent Rominger
Vice President, OmegA Capture,
Northrop Grumman Innovation Systems,
United States

KEYNOTE: OmegA Launch Vehicle

Abstract
OmegA is a launch system designed for medium and large payloads for commercial and government payloads. It consists of Intermediate and Heavy Configurations. This keynote will present innovative solid rocket motor technologies and manufacturing techniques that have been incorporated into the vehicle design and manufacturing.

Biography
Kent Rominger is the vice president and capture lead for Northrop Grumman's OmegA launch system. He joined Northrop Grumman in 2006 and has held multiple leadership roles, including vice president of Strategic Programs, vice president of Strategy and Business Development and vice president of Propulsion Systems' Test and Research Operations. Prior to his time at Northrop Grumman, Rominger was a NASA astronaut; he flew on five space shuttle missions and logged more than 1,600 hours in space. Rominger also spent 26 years in the U.S. Navy, serving as an F-14 Tomcat pilot and as a Navy test pilot.

C4.	IAF SPACE PROPULSION SYMPOSIUM	Date	Time	Room

Session: 4 – Electric Propulsion

2019-10-23 | 09:45 | 143B

Christine Charles
Professor of the Space Plasma,
Power and Propulsion Laboratory, The Australian National University,
Australia

KEYNOTE: Lab to Launch

Abstract
Thousands of small satellites (such as *CubeSats*) are expected to be launched over the next decade. Electric propulsion has been an innovative solution in a number of space missions but its scalability remains a challenge. Many mature or under development space propulsion systems could also benefit from more compact and efficient power supplies. *Pocket Rocket* is an inexpensive Australian-born miniaturised electrothermal radio frequency plasma thruster which uses environmentally friendly propellant such as argon. The Australian Space Agency was recently launched: a complete end-to-end small satellite industry — "Lab to Launch" — is now available wholly within the Trans Australasian Pacific region, thanks to the recent demonstration of *Rocket Lab*'s access to orbit and successful commercial launches with the *Electron*Rocket. Groups at the Australian National University, Stanford University and the University of Auckland have joined forces to pave a path to space heritage for *Pocket Rocket* via the CubeSat platform.

Biography
Christine Charles is Professor and Head of the Space Plasma, Power and Propulsion laboratory at the Australian National University (ANU) in Canberra. She works on experimental expanding plasmas applied to space science and space propulsion (i.e., *Helicon* plasma thruster & *Pocket Rocket* electrothermal thruster). She was recently awarded the 2015 Women in Industry Excellence in Engineering. She has published over 200 articles in various international peer-reviewed journals and her scientific output has been recognised by her Fellowship of the American Physical Society in 2013 and her Fellowship of the Australian Academy of Science in 2015.

E1.	IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM	Date	Time	Room

Session: 4 – In Orbit – Postgraduate Space Education

2019-10-23 | 09:45 | 144C

Mengu Cho
Professor, Winner of the Frank J. Malina Malina Astronautics Medal,
Kyushu Institute of Technology,
Japan

KEYNOTE: Experience and Findings by Kyushu Institute of Technology to Have a Successful Space Capacity Building Program

Abstract
Small satellites, especially CubeSats, are ideal entrance for developing countries to join the space sector. There is a strong demand for human resource development programs, i.e. capacity building, through small satellite projects. There have been various training programs offered by institutions in space faring countries. Many programs, however, failed because they had lack of hands-on experience and did not cover the entire satellite system life cycle. The keys to success are to have trainees experience the complete cycle from mission definition to operation and to have strategy for sustainability after the training. Since 2011, Kyushu Institute of Technology (Kyutech) has been engaged in the capacity building activities in collaboration with United Nations Office of Outer Space Affairs. In 2013, Kyutech initiated Space Engineering International Course, a post-graduate educational curriculum offered in English. This presentation reviews our past experience and findings with emphasis on importance of hands-on and sustainability.

Biography
Prof. Mengu Cho received the B.S. and M.S. degrees from the University of Tokyo, and the Ph.D. degree from Massachusetts Institute of Technology in 1992. After working at Kobe University, International Space University, he joined Kyushu Institute of Technology in 1996. He is a Professor, the Director of the Laboratory of Spacecraft Environment Interaction Engineering and the head of Department of Space Systems Engineering. He received Space Development and Utilization Award from Japanese government twice. The satellite project, BIRDS-I, he supervised received 2017 GEDC Airbus Diversity Award in recognition of demonstrating a fine example of bringing diversity to engineering education.

B4.	26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS	Date	Time	Room

Session: 5 – Access to Space for Small Satellite Missions | 2019-10-23 | 14:45 | 151B

Carlos Niederstrasser
Systems Architect,
Northrup Grumman,
United States

KEYNOTE: A 2019 Update on the Impending Small Launch Vehicle Boom

Abstract
The 2010's has seen a dramatic increase in small launch vehicle contenders, defined as rockets capable of carrying at most 1000 kg to Low Earth Orbit. Spurred on by government programs sponsorship and the perceived exponential growth of CubeSats and nanosatellite constellations, more than 100 different commercial, semi-commercial, and government entities worldwide are now working on new entrants of this class. Even as secondary slots on larger rockets and CubeSat missions as cargo to the International Space Station proliferate, new entrants continue to emerge looking for a new magic formula that will set them apart from the competition. With so many potential vehicles in various stages of conception or development, specific trends in performance, cost, and technologies can be identified. This study compares capabilities, stated mission goals, cost and funding sources, and testing progress of the new vehicles contributing to this new wave of "Launch Fever".

Biography
Carlos is a Systems Architect with Northrop Grumman Innovation Systems, working on strategic activities, new business pursuits, and special initiatives. Some of the programs Carlos has supported at NGIS include the Mission Extension Pods, the Antares Accident Investigation Board, and the Dawn interplanetary spacecraft. Carlos is a member of the steering committee for the Khalifa University Space Systems and Technology Program in the UAE. His annual "Small Launch Vehicle Survey" has become the definitive compendium of world-wide small launcher development efforts. Carlos holds degrees from Princeton University and Stanford University.

E5.	30th IAA SYMPOSIUM ON SPACE AND SOCIETY	Date	Time	Room

Session: 3 – Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach | 2019-10-23 | 14:45 | 145A

Frank White
Author,
American Institute of Aeronautics and Astronautics (AIAA),
United States

KEYNOTE: The Overview Effect and the Arts

Abstract
The Overview Effect is an experience of astronauts when they see the Earth from space and in space. Astronauts are typically trained as scientists and engineers, and they often assert that artists should have the Overview Effect experience. Indeed, the Overview Effect has been an attractive subject for artists of all kinds, from painters to filmmakers to musicians, and more. For example, Roger Goula, a London-based composer, has created a symphony called "Overview Effect." Daniela De Paulis launched the COGITO project which, among other things, monitors the brainwaves of subjects as they view images of the Earth. What draws so many artists to the Overview Effect? Even more important may be the question of how the arts might be used to "bring the Overview Effect down to Earth," transforming the awareness of the vast majority of the population.

Biography
Frank White is a magna cum laude graduate of Harvard College, a member of Phi Beta Kappa, and a Rhodes Scholar. He earned an M.Phil. in Politics from Oxford University. White's best-known book, The Overview Effect: Space Exploration and Human Evolution, is considered by many to be a seminal work in the field of space exploration. The fourth edition of The Overview Effect is scheduled for publication in 2020. White considers himself to be a "space philosopher," and has long advocated developing a new philosophy of space exploration. His book on this topic, The Cosma Hypothesis: Implications of the Overview Effect, was published in March 2019.

Thursday 24 October

A2.	IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM	Date	Time	Room

Session: 4 – Science Results from Ground Based Research | 2019-10-24 | 09:45 | 143C

Satoshi Matsumoto
Associate Senior Researcher, Human Spaceflight Technology Directorate,
Japan Aerospace Exploration Agency (JAXA),
Japan

KEYNOTE: Fluid Physics from International Space Station

Abstract
The International Space Station (ISS) provides a great opportunity to conduct experiments that can only be achieved there. Usually, we are conducting experiments assuming gravity without consciousness. However, in an environment where gravity does not act, it is possible to observe the phenomena more simply and it will be helpful for understanding the true nature. Disappearing the buoyant effect is one of most remarkable in microgravity. The buoyancy convection induced by density difference often appear in materials processing, combustion, and even in cell in life sciences, which means that the fluid physics deeply relates such things. 20 years at NASA, 10 years for JAXA and ESA have passed after starting to utilize the ISS for progress of science and technology. The experiment in fluid physics utilizing the ISS in each space agency will be introduced and the benefits, values, prospects of the ISS in fluid physics will be presented.

Biography
Dr. Satoshi Matsumoto is an associate senior researcher in Japan Aerospace Exploration Agency and a professor of University of Tsukuba. He has engaged in microgravity experiments as a project scientist as well as a researcher for more than 20 years. He also served as an increment manager to oversee the planning and implementation of ISS experiments. He is exchanging information about experiments in each country based on international human relations built through those works. Recently, his work has expanded to R&D of the environment control and life support system (ECLSS) for future Deep Space Gateway, Moon and Mars exploration.

C2.	IAF MATERIALS AND STRUCTURES SYMPOSIUM	Date	Time	Room

Session: 6 – Space Environmental Effects and Spacecraft Protection | 2019-10-24 | 09:45 | 152B

Peter C.E Roberts
Lecturer,
The University of Manchester,
United Kingdom

KEYNOTE: DISCOVERER – Making Commercial Satellite Operations in Very Low Earth Orbits a Reality

Abstract
DISCOVERER is a Euro Horizon 2020 funded project developing technologies to enable commercially-viable sustained operation of satellites in very low Earth orbits. Why operate closer to the Earth? For communications applications latency is significantly reduced and link budgets improved, and for remote sensing improved link budgets allow higher-resolution or smaller instruments, all providing cost benefits. In addition, all applications benefit from increased launch mass to lower altitudes, whilst end-of-life removal is ensured due to the increased atmospheric drag. However, this drag must also be minimised and compensated for. One of the key technologies being developed by DISCOVERER is a material that encourages specular reflection of the residual atmosphere at these altitudes. Combined with appropriate geometric designs these can significantly reduce drag, provide usable lift for aerodynamic attitude and orbit control, and improve the collection efficiency of aerodynamic intakes for atmosphere breathing electric propulsion systems, also being developed as part of DISCOVERER.

Biography
Dr Peter Roberts is the scientific and program coordinator of the Horizon 2020 funded DISCOVERER program, a 5.7M€ research project which aims to redesign remote sensing satellites for sustained operation at significantly lower altitudes. Currently he is the Space Theme Lead at the University of Manchester Aerospace Research Institute, and the Director of Research for the School of Mechanical, Aerospace and Civil Engineering. He obtained his doctorate at Cranfield University studying drag-free control for a space-based gravitational wave detector. He was the lead design engineer for Icarus, the world's first spacecraft end-of-life drag-enhancement deorbit device.

A3.	IAF SPACE EXPLORATION SYMPOSIUM	Date	Time	Room

Session: 5 – Solar System Exploration including Ocean Worlds | 2019-10-24 | 14:45 | 146B

Yanping Guo
Mission Design Section Supervisor,
Johns Hopkins University Applied Physics Laboratory (APL),
United States

KEYNOTE: Execution of Parker Solar Probe's Unprecedented Flight to the Sun and Early Results

Abstract
Parker Solar Probe (PSP) was launched on August 12, 2018, on its way to enter the solar corona and "touch" the Sun. We utilize enormous planetary gravity assists from 7 repeated Venus flybys via a V7GA trajectory in 24 solar orbits over 7 years, in order to get within 8.86 solar radii from the Sun's surface. The probe successfully entered the V7GA trajectory and made the first Venus flyby 52 days after launch. Five weeks later it flew by the Sun at a perihelion distance of 0.167 AU, setting new records as the closest craft to the Sun and the fastest manmade object. In this paper, the overall strategy for PSP's flight execution concerning in-flight trajectory control and re-optimization, orbit determination and navigation, and trajectory correction maneuvers will be presented. The performance of PSP's launch and initial flight, including the first Venus flyby and first solar encounter, will be reported.

Biography
Dr. Yanping Guo is a Principal Professional Staff and Mission Design Section supervisor at the Johns Hopkins University Applied Physics Laboratory. She is the Mission Design and Navigation Manager of NASA's Parker Solar Probe Mission, and the Mission Design Lead of NASA's New Horizons Mission. Dr. Guo is a member of the AIAA Astrodynamics Technical Committee (Committee Chair, 2012-2014) and a member of the International Symposium Space Flight Dynamics (ISSFD) Program Committee.

B3.	IAF HUMAN SPACEFLIGHT SYMPOSIUM	Date	Time	Room

Session: 7 – Advanced Systems, Technologies, and Innovations for Human Spaceflight | 2019-10-24 | 14:45 | 151A

Kathleen Boggs
System and Technology Demonstration Manager,
National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: From LEO to the Moon, Mars, and Beyond: Shaping Capability Development Strategies for NASA's Human Exploration Campaign

Abstract
This paper describes key human spaceflight capabilities that must be advanced to enable NASA's exploration goals. The paper addresses the importance and application of these capabilities to deep space human spaceflight. We discuss the activities required to advance critical exploration capabilities, the means of demonstrating system performance, and implementation planning, including selection of flight test location based upon the unique environments and characteristics of the ISS, Gateway, and potential lunar surface habitats. The optimal strategy will be a combination of ISS/LEO, Gateway, and lunar surface testing; however, not all capabilities require all these steps on their path to deep space exploration missions.

Biography
Dr. Kathleen Gallagher Boggs serves as the Systems and Technology Demonstration Manager in the International Space Station Division of the Human Exploration and Operations Mission Directorate at NASA. Her focus is on strategy for development and demonstration of technologies critical to enable deep space missions to destinations such as the Moon and Mars. Dr. Boggs holds a B.S. in Materials Science and Engineering from Carnegie Mellon University and a Ph.D. in Physics from Trinity College Dublin, where her work focused on development of high temperature ferromagnetic nanomaterials.

E4.	53rd IAA HISTORY OF ASTRONAUTICS SYMPOSIUM	Date	Time	Room

Session: 3 – "Can you believe they put a man on the moon?"
The Apollo Program

2019-10-24 14:45 147B

Rhoda Shaller Hornstein
Retired,
National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: A Girl in the Man-on-the-Moon Program: Camaraderie and Discrimination in the Apollo Era

Abstract
The author reported for duty 51 years ago to the NASA Goddard Space Flight Center. As an entry level Aerospace Technologist, her role in Apollo 11 was to operate the Goddard Real Time System to record radar data from the tracking sites and use this data to update the orbit and send out acquisition messages. The author's fondest memory of the Apollo program, especially Apollo 11, was that, with less than one year of Government service, she had the opportunity to work among the "giants" of NASA and experience firsthand the "Apollo Mentality" that guided her through 46 years at NASA. She also experienced the highs of camaraderie and the lows of discrimination. The camaraderie lasted one year until a manager asked why she was not pregnant. Thus began the discrimination, more specifically gender harassment.This paper addresses how the "girl" accommodated both behaviors through the lens of the "Apollo Mentality" during her NASA career.

Biography
During her 46-year career with NASA, Rhoda Hornstein was a leader who achieved an impressive record of technical accomplishments. Upon her retirement in 2014, the NASA Administrator wrote, "You can be proud of how you applied your engineering ingenuity and influence to achieve national space program initiatives in human spaceflight and robotic science missions; the supporting tracking networks and data systems; and more recently the expendable launch services necessary for access to space." She is the author of 50 publications and recipient of numerous awards including two NASA Exceptional Service Medals, Silver Snoopy Astronauts Award, Federal 100 Information Technology Award, and IAF Distinguished Service Award for leadership of the Small Satellite Missions Symposium.

Friday 25 October

B1.	IAF EARTH OBSERVATION SYMPOSIUM	Date	Time	Room

Session: 6 – 50 years of Earth observation: The contribution to sustainable development goals and plans for the future

2019-10-25 09:45 144C

Lawrence Friedl
Director, Applied Sciences Program,
National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: 50 Years of Earth Observations: The contribution to sustainable development goals and plans for the future

Abstract
This presentation will provide a broad overview of the role of satellite based earth observations contributing to UN sustainable development goals and plans for the future. It will cover the over 50 years of increasingly capable satellite observations, how they were developed, how applications to sustainable development goals were developed and how they have been used for monitoring the use of planet resources and impacts on sustainability. The talk will cover climate, environment, urban areas, water, land, ocean and cryosphere concentrating on how humanity has addressed sustainability issues and how Earth Observations from space have helped. Finally, the presentation will address plans for the future.

Biography
Lawrence Friedl serves as the director of the Applied Sciences Program within the Earth Science Division at NASA Headquarters. The Program supports efforts to discover and demonstrate innovative and practical applications of Earth science by government, business, and other organizations. He has been with NASA since 2002. Among his responsibilities, Lawrence is a Vice-Chair of the interagency U.S. Group on Earth Observations (USGEO) and represents the United States on the international Group on Earth Observations (GEO). Prior to joining NASA, Lawrence worked at the US Environmental Protection Agency, focusing on applications of geospatial data and technology.

B4.	26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS	Date	Time	Room
	**Session: 8** – Small Spacecraft for Deep-Space Exploration	2019-10-25	09:45	151B

Andrew Klesh
Mission Architect,
NASA Jet Propulsion Laboratory (JPL),
United States

KEYNOTE: MarCO: Flight Results from the First Interplanetary CubeSat Mission

Abstract
Launched May 5th, 2018, the MarCO spacecraft have demonstrated that small spacecraft can operate in the deep space environment. The spacecraft successfully performed multiple trajectory correction maneuvers to achieve its flyby of Mars. By choosing an advantageous angle, MarCO-B was able to simultaneously image the Earth and Moon at a distance of approximately 1 million kilometers. This vantage point exemplifies some of the usecases of low-cost explorers, including providing observational capability that a larger explorer might not be able to provide on its own. On November 26, 2018, the MarCO spacecraft successfully flew by Mars while relaying entry-descentand-landing telemetry for the InSight vehicle. Both spacecraft performed beyond expectations and were able to provide a real-time link for the so-called "seven minutes of terror". Many lessons have been derived from the MarCO mission. From planetary protection to low cost ops, MarCO is paving the way to a new generation of explorers.

Biography
Dr. Andrew Klesh is chief engineer of the MarCO interplanetary mission, consisting of the first two CubeSats flying beyond Earth. He also serves as technical lead of the Buoyant Rover for Under-Ice Exploration team, working to explore the ice-water interface in arctic, antarctic, and glacial terrain. Previously, he served as PI for the INSPIRE interplanetary CubeSats, and was postdoc & chief engineer of U. Michigan's Radio Aurora Explorer CubeSat project. Prior to JPL, he served as a Postdoctoral Fellow at JAXA supporting the Hayabusa and Ikaros missions.

C4.	IAF SPACE PROPULSION SYMPOSIUM	Date	Time	Room
	**Session: 9** – Hypersonic Air-breathing and Combined Cycle Propulsion	2019-10-25	09:45	143A

Marius Wilhelm
Research Engineer,
German Aerospace Center (DLR),
Germany

KEYNOTE: Test Complex M11: Research on Future Orbital Propulsion Systems and Scramjet Engines

Abstract
Test Complex M11 is a part of the Institute of Space Propulsion of the German Aerospace Center (DLR) at the European Research and Test Site for Chemical Space Propulsion Systems in Lampoldshausen. Test Complex M11 is home of the Department of Propellants, where research and test activities are focused on advanced storable propellants for satellites and orbital propulsion systems to replace hydrazines in the whole operational range. A short historical overview of test complex M11 will be given. Main criteria for propellants selections based on mission targets shall furthermore be given and discussed. Research activities for supersonic and hypersonic flows for Ramjet and Scramjet engines research activities are presented. Research and development work, infrastructure of the test complex with its 6 testbeds will be presented with its test envelopes and a short overview over planned modifications for the next decade will be given.

Biography
Mr. Marius Wilhelm joined the DLR-Institute of Space Propulsion in 2014. During that time he was allocated inside the advanced nozzles group responsible for automation and software analysis of nozzle and flow tests with Schlieren high speed imaging. Afterwards he worked in the gel propellants group investigating low frequency combustion instabilities. In 2015 he has been working on liquid high energy monopropellants. Research work was especially done on thermal ignition, spray, ignition and combustion behavior. In 2016 he became part of the test facilities group and has been responsible for design and construction of M11 vacuum test facility for research on advanced orbital propulsion systems.

E6.	IAF BUSINESS INNOVATION SYMPOSIUM	Date	Time	Room

Session: 4 – Strategic Risk Management for Successful Space & Defence Programmes

2019-10-25 | 09:45 | 144A

Chris Blackerby
Group COO & Director,
Astroscale,
Japan

KEYNOTE: Managing Risk in the Effort to Maintain Orbital Sustainability

Abstract
Removing existing orbital debris and mitigating the creation of future debris is one of the most fundamental issues of the emerging space economy. Space-related industries and government entities are in an increasingly difficult situation: the risk inherent in performing missions to remove potentially catastrophic debris from orbit is matched only by the risk of inaction to the problem. Astroscale is one of the few companies in the world proposing to aid in the removal of orbital debris through the provision of End of Life and Active Debris Removal services. While Astroscale is currently developing its first mission, we are also making active contributions to policy discussions and helping to develop a marketplace for debris removal. Coordination between the private sector and government will be essential in order to establish norms and standards to create an industry that reduces the risk of collisions in orbit, as well as making servicing missions as safe as possible.

Biography
Chris Blackerby is Group Chief Operating Officer for Astroscale, a venture-backed company dedicated to removal of debris from space in order to create a more sustainable orbital environment. In this role Chris oversees all activities, from strategic planning to internal management. Previously Chris was the NASA Attaché in Asia based at the U.S. Embassy in Tokyo from 2012-2017. In that capacity he facilitated cooperation, served as senior strategic space advisor, negotiated agreements and resolved disputes with partners. Chris began working for NASA as a Presidential Management Fellow in 2003.

E1.	IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM	Date	Time	Room

Session: 8 – Hands-on Space Education and Outreach

2019-10-25 | 12:45 | ISZ

Kristen J. Erickson
Director, Science Engagement and Partnerships, Science Mission Directorate,
National Aeronautics and Space Administration (NASA),
United States

KEYNOTE: NASA Science Activation

Abstract
In 2016, NASA's Science Activation program competitively awarded 27 institutions to enable NASA content and science experts into the learning environment more effectively and efficiently with learners of all ages. Addressing community needs, the teams cooperate with NASA to meet four objectives as verified by independent evaluators. Currently, there is a network of over 200 partners to maximize collective impact of NASA's $45M/year investment. All science disciplines are mapped to Earth and Space Science education standards. Education technologies and digital learning avenues contribute to the collective impact and dissemination. In 2017, this program was instrumental in the 2017 Total Solar Eclipse becoming the largest engagement event in recent U.S. history. Also, there are citizen science opportunities in data analysis, problem solving, and observations. Volunteers are excited to work with NASA become a part of the ecosystem of learners and STEM professionals—all the result of a science-activated global population!

Biography
Ms. Erickson manages NASA's Science Activation program, citizen science, external IT, and strategic communications. She led record-breaking events: 2017 Total Solar Eclipse, 2012 Mars Curiosity Landing, and 2012 Transit of Venus. From 2006-09, she led NASA Strategic Communications as Deputy Associate Administrator (DAA), including NASA's 50th and Apollo 40th anniversary celebrations. Previously, she managed the Space Shuttle Program Business Office (1994-1999) as Branch Chief, the Office of Biological and Physical Research Enterprise (2001-2003) as acting DAA (Management). Starting her career at the Johnson Space Center, Houston, Texas; she has college degrees from Texas A&M and Harvard.

B5.	IAF SYMPOSIUM ON INTEGRATED APPLICATIONS	Date	Time	Room

Session: 3 – Satellite Commercial Applications | 2019-10-25 | 13:30 | 140B

Steve Lee
CEO,
Stevenson Astrosat,
United Kingdom

KEYNOTE: ThermCERT – A Signature Commercial Space Application to Tackle Fuel-Poverty in the United Kingdom

Abstract
In the UK, approximately 2.5 million households experienced fuel poverty during 2015. Suppliers of energy have been tasked with addressing this problem, finding households in need, and then employing measures to help these families save as much money as possible. Not only does this result in an improved economic situation and quality-of-life for the affected households, the energy companies can also maintain a competitive position in the marketplace. A significant challenge, however, is to find the households that have the greatest needs. In partnership with the ESA and E.On, a leading energy provider in the UK, AstrosatUK has deployed the ThermCERT commercial satellite application product, which identifies and visualizes areas of the UK with the greatest levels of need. In this invited keynote talk, we present ThermCERT as one example of just how powerful the combination of existing space-based and terrestrial geospatial data can be, in order to solve critical human challenges through a commercial product.

Biography
Steve Lee, CEO of Stevenson Astrosat, is an award winning Astrophysicist and Astronautical Engineer. Proven innovator and Entrepreneur. A strong communicator and leader within the growing commercial space sector. His own commercial Astronautics and Earth observation company – Stevenson Astrosat is paving the way across the downstream using innovation to solve global challenges. Its current focus is on Managed Earth Observation Services and solutions for disaster mitigation and resilience at government level as well as low carbon, core infrastructure and renewable energy solutions. As part of this Astrosat recently moved into hardware and payload development as well as integrated satellite communication systems.

D2. and D6.	IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM	Date	Time	Room

Session: 9-D6.2 – The Apollo program and the rockets that took humanity to the moon | 2019-10-25 | 13:30 | 146C

Roger Launius
Aerospace Historian,
Launius Historical Services,
United States

KEYNOTE: Lasting Developments from Apollo and Saturn V

Abstract
To accomplish the Moon landings in the 1960s and early 1970s NASA had to create the technology that could launch the astronauts, sustain them on a trip to and from the Moon, land them on the surface, and enable them to depart the Lunar Module and work on the Moon's surface. The Saturn V rocket, the Command and Service Module, the Lunar Module, and the spacesuits that were built proved remarkably capable and usable, both for these missions, and provided a base of knowledge that has descended since that time. This presentation will explore this technology and its uses.

Biography
Dr. Roger D. Launius worked as a senior official at the Smithsonian Institution's National Air and Space Museum in Washington, D.C., until retirement in 2017. Between 1990 and 2002 he served as chief historian of the National Aeronautics and Space Administration. He is the author, most recently, of *The Smithsonian History of Space Exploration: From the Ancient World to the Extraterrestrial Future* (Smithsonian Books, 2018); *Apollo's Legacy: The Space Race in Perspective* (Smithsonian Books, 2019); and *Reaching for the Moon: A Short History of Space Race* (Yale University Press, 2019).

E3.	32nd IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS	Date	Time	Room

Session: 6 – Economics of Procurement in Space Contracting | 2019-10-25 | 13:30 | 144A

Eric Morel de Westgaver
Director of Industry, Procurement and Legal Services,
European Space Agency (ESA),
The Netherlands

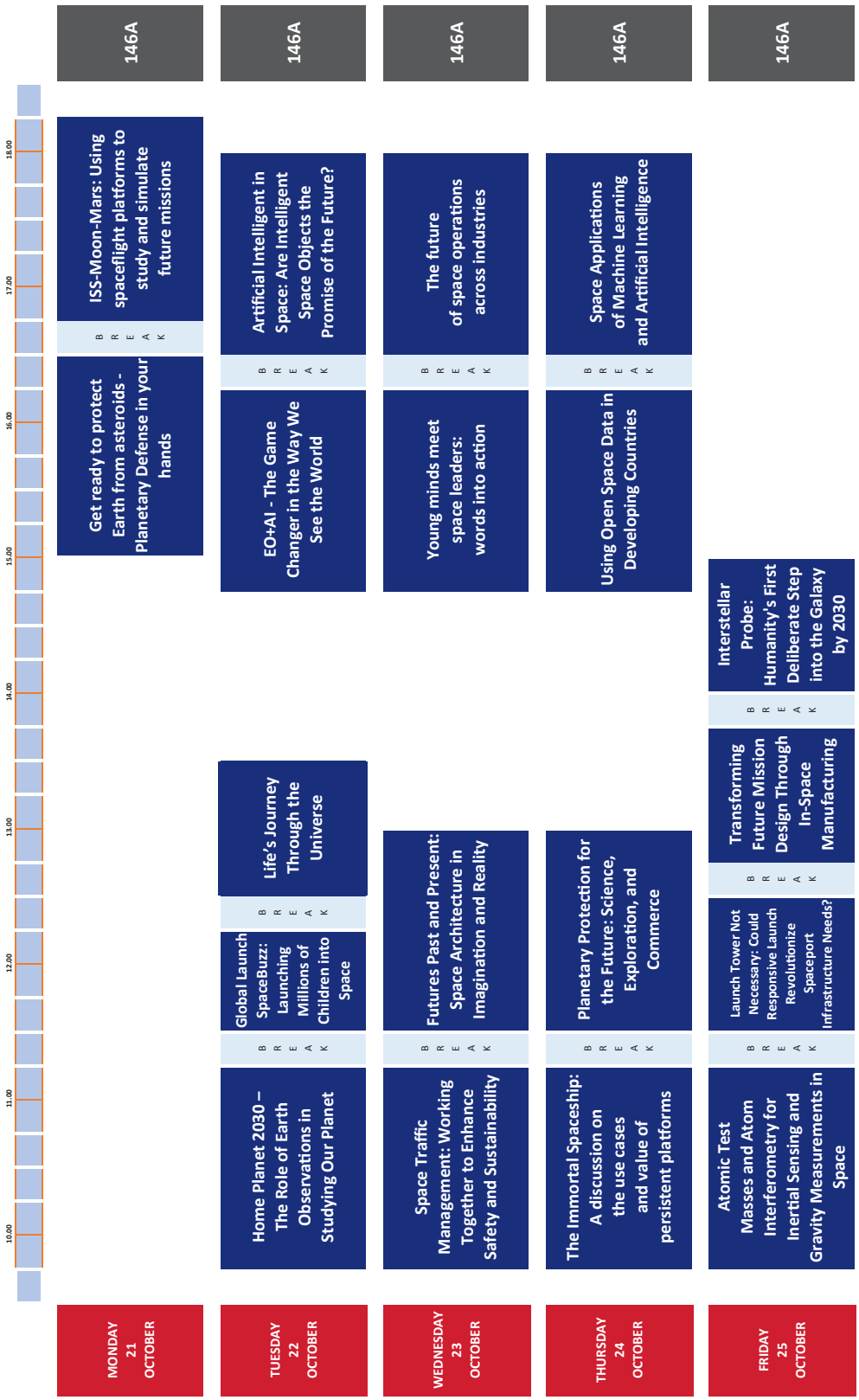
KEYNOTE: The Economics of Procurement in Space & Defense Contracting

Abstract
For the major future institutional missions, it is of vital importance for the public procurement authorities to have a solid and consolidated baseline prior to the initiation of the development phase. Such solid baseline needs to be supported and validated through a detailed assessment of the requirements in relation to the available technologies. The new space era should go hand in hand with a new acquisition policy involving a progressive transfer of responsibilities and design authority to industry. This new distribution of responsibilities between the public sector and industry can become a reality as a result of different procurement policies such as joint proposal teams, joint dialogue phases and the concept of procurement as a service. Transfer to industry of the responsibility for the mission related technology preparation activities is another example. The economic impact of such approach could be substantial as it could lead to faster development times and earlier availability of the satellite functionalities/ objectives.

Biography
Eric Morel de Westgaver is currently the Director of Industry, Procurement and Legal Services (D/IPL) of the European Space Agency (ESA) as well as the Head of ESA HQ Paris. Since joining ESA in 1987, Mr. Morel de Westgaver has served in several functions at the agency, including as Head of the Procurement Department in the Directorate of Resources Management and Industrial Matters; as Director of Procurement, Financial Operations and Legal Affairs; and as Associate Director for Industrial Matters, to which he was nominated by the Director General. He graduated in Economics from the Catholic University of Louvain, Belgium.

5 Special Sessions

5.1 Special Sessions at a Glance



5.2 Special Sessions per Day

SpS

Special Sessions have a limited participant capacity. Seating is granted on a first-come, first-served basis. Participants are encouraged to arrive 10 minutes prior to the start time.

Monday 21 October

15:00 - 16:30 Get Ready to Protect Earth from Asteroids – Planetary Defense in Your Hands

Room: 146A

Format: Panel Discussion

Organizers:

Alex Karl
Chair,
IAF Technical Committee on NEOs, Operations Engineer, Space Applications Services,
Belgium

Nancy C. Wolfson
President,
Disrupting Space LLC,
United States

Get Ready to Protect Earth from Asteroids – Planetary Defense in Your Hands

Imagine the following news headline: Asteroid on collision course with Earth – what would be your thoughts? Is there anything we can do about it? Where will it hit? What are the consequences? Is it even confirmed or just sensationalism? Wonder no more! Join this Special Session on Planetary Defense and learn from the top experts what is fact and what is fiction. Participate in an exercise that let's you decide what to do.

Facilitator:

Nancy C. Wolfson
President,
Disrupting Space LLC,
United States

Speakers:

Bill Nye
CEO,
The Planetary Society,
United States

Lindley Johnson
Planetary Defense Officer,
National Aeronautics and Space Administration (NASA),
United States

Dumitru-Dorin Prunariu
Cosmonaut, NEO Expert,
Association of Space Explorers (ASE),
Romania

Mariella Graziano
Executive Director Space Systems and Robotics,
G.M.V. Space and Defence, S.A.,
Spain

Alex Karl
Chair,
IAF Technical Committee on NEOs, *Operations Engineer*, Space Applications Services,
Belgium

TP SpS

16:45 - 18:15 ISS-Moon-Mars: Using Spaceflight Platforms to Study and Simulate Future Missions

Room: 146A

Format: Panel Discussion

Organizers:

Julie Robinson
Chief Scientist,
International Space Station Division,
National Aeronautics and Space Administration (NASA),
United States

Oleg Kotov
Cosmonaut and Deputy Director for Science,
Institute of Biomedical Problems (IBMP),
Russian Academy of Sciences (RAS),
Russian Federation

Livio Narici
Professor of Applied Physics,
Università di Roma "Tor Vergata", Italian Space Agency (ASI),
Italy

ISS-Moon-Mars: Using Spaceflight Platforms to Study and Simulate Future Missions

Human spaceflight will soon have simultaneous operations of platforms in low Earth orbit, lunar orbit and on the lunar surface. In this session, we will brainstorm how these platforms can simulate future lunar and Mars mission operations focused on three themes: (1) Analogs for isolation and microgravity for transit to Mars, (2) ISS and Lunar simulations for Mars missions, and (3) autonomous mission operations. At the end of the session, audience members will have the opportunity to add their ideas to the mix and discussion in this session will influence the strategic plans for current and future human spaceflight vehicles.

Facilitators:

Sam Scimemi
Director,
International Space Station Division,
National Aeronautics and Space Administration (NASA),
United States

Livio Narici
Professor of Applied Physics,
Università di Roma "Tor Vergata", Italian Space Agency (ASI),
Italy

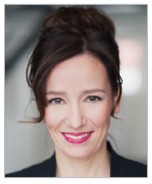
Speakers:

Oleg Orlov
Director,
Institute of Biomedical Problems (IBMP),
Russian Academy of Sciences (RAS),
Russian Federation

Jens Jordan
Director,
Institute of Aerospace Medicine,
German Aerospace Center (DLR),
Germany

William H. Paloski
Director,
Human Research Program,
National Aeronautics and Space Administration (NASA),
United States

Oleg Kotov
Cosmonaut and Deputy Director for Science,
Institute of Biomedical Problems (IBMP),
Russian Academy of Sciences (RAS),
Russian Federation



Isabelle Tremblay
Director,
Astronauts, Life Sciences and Space Medicine,
Canadian Space Agency (CSA),
Canada

Masaki Shirakawa
Head of JEM Utilization Planning Group,
Japan Aerospace Exploration Agency (JAXA),
Japan

Julie Robinson
Chief Scientist,
International Space Station Division,
National Aeronautics and Space Administration (NASA),
United States

Maxim Kharlamov
Deputy Chief,
Yu.A. Gagarin Research and Test Cosmonaut Training Center,
Russian Federation

Jennifer Fogarty
Chief Scientist,
Human Research Program,
National Aeronautics and Space Administration (NASA),
United States

Michelle Rucker
Lead of Mars Integration Group,
National Aeronautics and Space Administration (NASA),
United States

Maria Antonietta Perino
Director of Relations with Space Associations,
Thales Alenia Space,
Italy

Tuesday 22 October

09:45 - 11:15 Home Planet 2030 – The Role of Earth Observations in Studying Our Planet

Room: 146A

Format: Panel Discussion

Organizers:

James Graf
Deputy Director for Earth Sciences and Technology,
NASA Jet Propulsion Laboratory (JPL),
United States

Harry Cikanek
Director,
Center for Satellite Applications and Research (STAR), National Environmental Satellite, Data, and Information Service (NESDIS), National Oceanic and Atmospheric Administration (NOAA),
United States

Home Planet 2030 – The Role of Earth Observations in Studying Our Planet

With ever growing need, this special session will describe future directions in Earth Observations over the next decade and how different agencies are working together to address the difficult and expensive challenges of obtaining accurate and calibrated measurements from space for research and operational services such as severe weather prediction. It will identify new opportunities for both individuals and organizations in the ever-evolving field of Earth science and applications.

Facilitator:

Michael H. Freilich
Retired – Former Director of the NASA's Earth Science Division,
National Aeronautics and Space Administration (NASA),
United States

Speakers:

Stephen Volz
Assistant Administrator for Satellite and Information Services,
National Environmental Satellite, Data, and Information Service (NESDIS), National Oceanic and Atmospheric Administration (NOAA),
United States

Alain Ratier
Director General,
EUMETSAT,
Germany

Josef Aschbacher
Director of Earth Observation Programs and Head of ESRIN,
European Space Agency (ESA),
Italy

Sandra A. Cauffman
Acting Director,
Earth Sciences Division,
National Aeronautics and Space Administration (NASA),
United States

Kazuo Tachi
Associate Director General,
Space Technology Directorate
Japan Aerospace Exploration Agency (JAXA),
Japan

11:30 - 12:15 Global Launch SpaceBuzz: Launching Millions of Children into Space

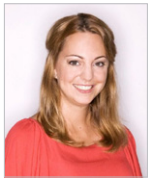
Room: 146A

Format: Panel Discussion

Organizers:

Janine Geijsen
Director,
SpaceBuzz,
The Netherlands

Debbie Schouten
Brandmanager,
SpaceBuzz,
The Netherlands



Jacqueline Vizee
Head of Production,
SpaceBuzz,
The Netherlands

Helen Kuipers
Branddirector,
SpaceBuzz,
The Netherlands

Zoran van Gessel
Chairman of the Board,
SpaceBuzz,
The Netherlands

Global Launch SpaceBuzz: Launching Millions of Children into Space

Dutch astronaut André Kuipers introduces SpaceBuzz to inspire children worldwide with the astronaut's view of our beautiful yet vulnerable planet and make them ambassadors of planet Earth. This revolutionary outreach and educational program puts children in the footsteps of astronauts. It uses the latest virtual reality and 4D technology in an almost real space vehicle to inspire children on topics like space, earth and technology (STEM). Making space even more relevant and approachable to the general public. SpaceBuzz is a nonprofit foundation with a global mission. It has an open access model with local adaptability regarding astronauts, countries and content.

Facilitators:

Max Louwerse
Professor Cognitive psychology and Artificial Intelligence,
SpaceBuzz/UvT,
The Netherlands

Peter van Kranenburg
Member of the Board,
SpaceBuzz,
The Netherlands

Speaker:

André Kuipers
ESA Astronaut,
SpaceBuzz,
The Netherlands

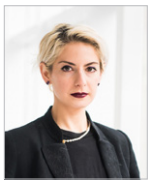
12:30 - 13:30 Life's Journey Through the Universe

Room: 146A

Format: Panel Discussion

Organizers:

Andrew Siemion
Director,
Berkeley SETI Research Center,
Bernard M. Oliver Chair,
SETI Institute,
United States



Claire Isabel Webb
PhD Candidate and Research Associate,
Massachusetts Institute of Technology (MIT),
United States

Life's Journey Through the Universe

In recent decades, astrobiology has revealed that our universe hosts myriad environments for life to thrive, sharpening humanity's oldest questions: Does life exist elsewhere in the universe? What was its origin? Is the universe home to extraterrestrial intelligence (ETI)? What would it mean if we found it?

Drawing from astrobiologists and scientists who search for ETI, the panel's goal is to find resonance between the two fields through the theme of (intelligent) life's evolution throughout the cosmos. This panel explores the possibility of interstellar transfer of organic material (panspermia), and, how technologically advanced life forms may have forged interplanetary connections.

Facilitator:

Pete Worden
Executive Director,
Breakthrough Initiatives,
Former Director,
NASA Ames Research Center,
United States

Speakers:

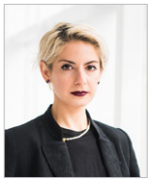
Lucianne Walkowicz
Astronomer,
The Adler Planetarium,
Co-Founder,
The JustSpace Alliance Country,
United States

Sara Seager
Astronomer,
Massachusetts Institute of Technology (MIT),
United States

Bill Diamond
President & CEO,
SETI Institute,
United States

Mike Garrett
Director,
Jodrell Bank Observatory Country,
United Kingdom

Andrew Siemion
Director,
Berkeley SETI Research Center,
Bernard M. Oliver Chair,
SETI Institute,
United States



Claire Isabel Webb
PhD Candidate and Research Associate,
Massachusetts Institute of Technology (MIT),
United States

14:45 - 16:15 EO+AI – The Game Changer in the Way We See the World

Room: 146

Format: Panel Discussion

Organizer/Facilitator:

Agnieszka Lukaszczyk
Senior Director,
European Affairs,
Planet,
Belgium

EO+AI – The Game Changer in the Way We See the World

The world of EO is dramatically changing driven by rapid advances in sensor and digital technologies. Recent decades have witnessed extraordinary developments in Information and Communication Technologies, including the Internet, Cloud computing and AI, leading to radically new ways to collect, distribute and analyse big data about our planet. This panel will provide context to how combination of EO and AI can offer unprecedented insights to the world we live in.

Speakers:

Will Marshall
CEO,
Planet,
United States

Rebecca Moore
Director,
Google Earth,
United States

Josef Aschbacher
Director of Earth Observation Programs and Head of ESRIN,
European Space Agency (ESA),
Italy

Carissa Christensen
CEO,
Bryce Space and Technology,
United States

Peter Platzer
CEO,
Spire Global,
United States

Philippe Pham
Senior Vice President, Head of Earth Observation, Navigation and Science,
Airbus,
Germany

16:30 - 18:00 Artificial Intelligence in Space: Are Intelligent Space Objects the Promise of the Future?

Room: 146A

Format: Group Discussion

Organizers:

Lucien Rapp
Law Professor & Director,
SIRIUS Chair, University Toulouse 1 Capitole,
France

George Anthony Long
Lawyer,
Legal Parallax, LLC,
United States

Cristiana Santos
Researcher,
SIRIUS Chair,
University Toulouse 1 Capitole,
France

Artificial Intelligence in Space: Are Intelligent Space Objects the Promise of the Future?

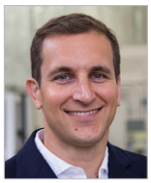
Intelligent space objects seemingly offer a promising future. They can be deployed as rovers and probes for assessing real-time data, used as on-orbit servicing robots, monitor terrestrial disasters and refugee migration through imagery analysis, enhance planetary protection, and assist in navigating through and the remediation of debris. Multi-disciplinary issues follow, from law, public policy, ethics, engineering, cybersecurity, national security, planetary protection, among others. In addition to the vital role machine intelligence will play in space based ventures, one related area of focus is how much autonomy, if any, intelligent space objects should have and what decisions necessitate human oversight.

Facilitator:

Lucien Rapp
Law Professor & Director,
SIRIUS Chair, University Toulouse 1 Capitole,
France

Speakers:

James Parr
Director, Frontier Development Lab CEO,
Trillium Technologies,
United Kingdom



Brian Israel
Co-Founder & Legal Counsel,
ConsenSys Space,
United States

Thomas Fouquet
Advisor to the Director, Innovation Applications & Science,
Centre National d'Études Spatiales (CNES),
France

Moriba Jah
Professor, Space Scientist and Astrodynamicist,
The University of Texas at Austin,
United States

Diane Howard
Executive Secretary,
International Institute of Space Law (IISL),
United States

Brent Sherwood
Chair,
AIAA Space Architecture Technical Committee (SATC),
Vice President of Advanced Development Programs,
Blue Origin,
United States

Wednesday 23 October

09:45 - 11:15 Space Traffic Management: Working Together to Enhance Safety and Sustainability

Room: 146A

Format: Group Discussion

Organizer:

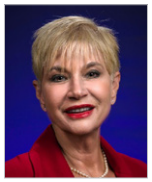
George Nield
President,
Commercial Space Technologies, LLC,
United States

Space Traffic Management: Working Together to Enhance Safety and Sustainability

Would you like to get involved in improving Space Traffic Management capabilities? Here's your chance! This session is designed to be innovative, instructive, interactive, and inclusive. You'll hear from leading experts on both the technology and the legal and regulatory framework. See a demonstration of current capabilities for tracking and evaluating the motion of satellites and orbital debris. Share your thoughts on needed improvements. And volunteer to be part of this grass-roots international initiative!

Speakers:

Sandy Magnus
Executive Director Emeritus,
American Institute of Aeronautics and Astronautics (AIAA),
United States



Diane Howard
Executive Secretary,
International Institute of Space Law (IISL),
United States

Moriba Jah
Professor, Space Scientist and Astrodynamicist,
The University of Texas at Austin,
United States

Daniel Oltrogge
Director,
Center for Space Standards and Innovation,
Analytical Graphics, Incorporated,
United States

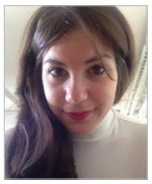
11:30 - 13:00 Futures Past and Present: Space Architecture in Imagination and Reality

Room: 146A

Format: Panel Discussion

Organizers:

Barbara Imhof
Managing Director, Space Architect,
LIQUIFER Systems Group (LSG),
Austria



Christina Ciardullo
Space Architect,
SEArch (Space Exploration Architecture),
PHD Candidate, Yale Center for Ecosystems in Architecture,
United States

Brent Sherwood
Chair,
AIAA Space Architecture Technical Committee (SATC),
Vice President of Advanced Development Programs,
Blue Origin,
United States

Futures Past and Present: Space Architecture in Imagination and Reality

Apollo 11 and 2001: A Space Odyssey were of the same era. 50 years later, our space future is not what we used to imagine. A space historian, astronaut, space journalist, NewSpace executive, and three space architects will discuss the gap between imagination and reality. Is this gap useful or destructive? How does today's changing landscape – "independent space" sector, Chinese space, "realistic" media depictions – change how we envision space architecture?

Speakers:

Brand Griffin
Space Architect, Program Manager for Single-Person Spacecraft,
Genesis Engineering Solutions,
United States

Margaret Weitekamp
Curator,
Space History Department, Smithsonian National Air and Space Museum,
United States

Sandy Magnus
Executive Director Emeritus,
American Institute of Aeronautics and Astronautics (AIAA),
United States

Leonard David
Journalist,
Space.com,
United States

Bob Smith
CEO,
Blue Origin,
United States

14:45 - 16:15 Young Minds Meet Space Leaders: Words Into Action

Room: 146A

Format: Panel Discussion

Organizers:

Martin Stasko
Consultant,
Office of the Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

Ayami Kojima
Expert,
Space Applications Section,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

Young Minds Meet Space Leaders: Words Into Action

Eager to see how young people's ideas can influence the future of space policy and exploration? Hear the winners of the Space4Youth competition launched by UNOOSA in collaboration with SGAC pitch their ideas on how space can help sustainable development to space leaders and get their feedback on how to bring their ideas to the next level at this session. The resulting matchmaking between youths and space leaders may result into concrete projects. Join us and contribute to the intergenerational discussion on the future of space!

Facilitator:

Ayami Kojima
Expert,
Space Applications Section,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

Speakers:

Simonetta Di Pippo
Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

Pascale Ehrenfreund
Chair of the Executive Board,
German Aerospace Center (DLR),
Germany

Clémentine Decoopman
Executive Director,
Space Generation Advisory Council (SGAC),
Austria

Josef Aschbacher
Director of Earth Observation Programs and Head of ESRIN,
European Space Agency (ESA),
Italy

Kai-Uwe Schrogl
President,
International Institute of Space Law (IISL),
Germany

Jean-François Clervoy
Former Astronaut & President,
Novespace,
France

Arthur Nielsen Demain
Winner of Space4Youth Competition,
Volunteer Peacebuilder and Educator,
Madaris Volunteer Programme,
The Philippines

George Profitiliotis
Winner of Space4Youth Competition,
Phd Candidate,
National Technical University of Athens,
Greece

Milica Milosev
Winner of Space4Youth Competition,
Volunteer,
Team 54 Project International,
Serbia

16:30 - 18:00 The Future of Space Operations Across Industries

Room: 146A

Format: Panel Discussion

Organizer:

Alvaro Alonso Ruiz
Business Development Manager,
Telespazio VEGA Deutschland GmbH,
Germany

The Future of Space Operations Across Industries

A new Space Age is emerging. The launcher and space segments have already been disrupted, now it's the turn of the ground segment and operations.

Can we find synergies between the different operational concepts across space industries; from mega-constellations to on-orbit servicing, planetary missions to in-space manufacturing?

This session will provide a platform to uncover best practices and set a new direction for the field, with the aim of making the commercial space revolution a success.

Speakers:

Gary Calnan
Co-Founder and CEO,
CisLunar Industries,
Luxembourg

Mark Longanbach
Senior Director of Mission Operations,
Planet Labs,
United States

Yuya Nakamura
President and CEO,
Axelspace Corporation,
Japan

Jeremy Schiel
CMO,
Orbit Fab, Inc.,
United States

Guillaume Tanier
Strategy & Products NewSpace,
Telespazio VEGA Deutschland GmbH,
Germany

Kyle Acierno
Vice President of Global Sales and Strategy,
ispace,
Japan

Thursday 24 October

09:45 - 11:15 The Immortal Spaceship: A Discussion on the Use Cases and Value of Persistent Platforms

Room: 146A

Format: Panel Discussion

Organizers:

Deborah (Debi) Tomek
Deputy Director,
Space Technology and Exploration Directorate,
NASA Langley Research Center,
United States

Keith Belvin
Space Assembly of Modular Systems (SAMS) Office Lead,
NASA Langley Research Center,
United States

Dale Arney
Space Assembly of Modular Systems (SAMS) Office,
NASA Langley Research Center,
United States

Jay Pittman
Assistant Director for Strategic Integration,
NASA Goddard Space Flight Center,
United States

John Vickers
Principal Technologist,
Space Technology Mission Directorate,
National Aeronautics and Space Administration (NASA),
United States

The Immortal Spaceship: A Discussion on the Use Cases and Value of Persistent Platforms

Future civil, commercial, and defense space missions will be ambitious, requiring new technologies and operational paradigms. One of these new paradigms is the use of On-orbit Servicing, Assembly, and Manufacturing (OSAM) to enable large, persistent, upgradable, and maintainable spacecraft. A persistent platform uses OSAM capabilities to provide spacecraft bus functions to payloads and instruments while also capable of being expanded and upgraded over time. Please join a lively discussion with your government, commercial, and academic colleagues that explores the use cases, value proposition, and technology development needs for a persistent platform and other OSAM applications. Also participate online at https://forms.gle/3eTrSJzKrQDbiEVn9

Facilitators:

Deborah (Debi) Tomek
Deputy Director,
Space Technology and Exploration Directorate,
NASA Langley Research Center,
United States

Ben Reed
Deputy Division Director,
Satellite Servicing Project Division (SSPD),
NASA Goddard Space Flight Center,
United States

Speakers:

Douglas Terrier
Chief Technologist,
National Aeronautics and Space Administration (NASA),
United States

Erica Rodgers
Science and Technology Partnerships Lead,
National Aeronautics and Space Administration (NASA),
United States

11:30 - 13:00 Planetary Protection for the Future: Science, Exploration, and Commerce

Room: 146A

Format: Panel Discussion

Organizers:

Mia A. Brown
Research Associate,
Space Studies Board – National Academies of Sciences, Engineering, and Medicine,
United States

David H. Smith
Senior Study Director,
Space Studies Board – National Academies of Sciences, Engineering, and Medicine,
United States

Planetary Protection for the Future: Science, Exploration, and Commerce

This session provides an opportunity for representatives of space agencies and the private sector to discuss what activities are on-going and needed to support evolving planetary protection standards to enable future spaceflight ambitions. Are current research activities sufficient to meet the needs of all interested parties? How should the space community organize itself to develop the necessary scientific and technical knowledge required to support policies enabling ambitious space exploration goals?

Facilitator:

James Green
Chief Scientist,
National Aeronautics and Space Administration (NASA),
United States

Speakers:

Lisa M. Pratt
Planetary Protection Officer,
National Aeronautics and Space Administration (NASA),
United States

Dan Hendrickson
Vice President Business Development,
Astrobotic Technology,
United States

Kyle Acierno
Vice President of Global Sales and Strategy,
ispace,
Japan

Michael Meyer
Lead Scientist for the Mars Exploration Program,
National Aeronautics and Space Administration (NASA),
United States

Simonetta Di Pippo
Director,
United Nations Office for Outer Space Affairs (UNOOSA),
Austria

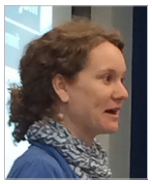
14:45 - 16:15 Using Open Space Data in Developing Countries

Room: 146A

Format: Panel Discussion

Organizers:

Jeanne Holm
Distinguished Instructor,
University of California,
Los Angeles (UCLA),
United States



Katherine Townsend
Chief Executive Officer,
Open Data Collaboratives,
United Republic
of Tanzania

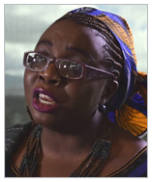
Rhiannan Price
Manager,
Digital Globe,
United States

Ian Shuler
Manager,
Development Seed,
Peru

Using Open Space Data in Developing Countries

Want to ensure the best use of your space data? Learn how Earth observation data is being applied in developing countries from those working on the ground to address key development and sustainability issues. Use cases, emerging technologies, and current programs will be shared with facilitated discussions to build new connections and identify actions toward making data more accessible and impactful. Participants in this highly interactive session will get toolkits, new ideas, and new partners. If you want to make a real impact with your data — this is the session for you.

Speakers:



Yeama Thompson
Commissioner,
Right to Access
Information Commission,
Government of Sierra
Leone,
Sierra Leone

Geoffrey Kateragga
Country Level Manager,
Open Street Maps,
Uganda

16:30 - 18:00 Space Applications of Machine Learning and Artificial Intelligence

Room: 146A

Format: Panel Discussion

Organizers:

Ali Nasseri
Program Manager and Consultant,
LDC Solutions,
Canada

Ksenia Lisitsyna
Business Development Manager,
Precious Payload,
Russian Federation

Space Applications of Machine Learning and Artificial Intelligence

This session covers the most advanced cases of AI use in space industry as well as more novel applications currently being pursued. We invite both AI specialists and those who are interested in boosting space sector activities with machine learning to join the discussion about the possibilities and limitations of artificial intelligence.

Speakers:

Ewan Reid
CEO,
Mission Control Space Systems,
Canada

Martin Ristov
Junior Member of Technical Staff,
MDA,
Canada

Friday 25 October

09:45 - 11:15 Atomic Test Masses and Atom Interferometry for Inertial Sensing and Gravity Measurements in Space

Room: 146A

Format: Panel Discussion

Organizers:

Nan Yu
Senior Research Scientist,
NASA Jet Propulsion Laboratory (JPL),
United States

Ulf Israelsson
Program Manager,
Fundamental Physics and Quantum Technology,
NASA Jet Propulsion Laboratory (JPL),
United States

Bradley Carpenter
Chief Scientist,
Space Life and Physical Sciences,
National Aeronautics and Space Administration (NASA),
United States

Atomic Test Masses and Atom Interferometry for Inertial Sensing and Gravity Measurements in Space

In May 2018, the NASA Cold Atom Laboratory was successfully launched and installed onboard ISS. Together with the recent DLR MAIUS sounding rocket experiments, they herald the beginning of unique science opportunities enabled by atom interferometers. Potential applications include gravity measurements in Earth and Planetary Science, detection for gravitational wave, dark energy, and dark matter, fundamental physics tests, and space navigation. The special session is aimed at introducing to broad space exploration and aeronautic communities the benefits and capabilities of cold atom technologies and their far-reaching applications, and provide a forum to foster discussions and collaborations in multidisciplinary areas.

Facilitator:

Ulf Israelsson
Program Manager,
Fundamental Physics and Quantum Technology,
NASA Jet Propulsion Laboratory (JPL),
United States

Speakers:

Robert Thompson
Project Scientist,
Cold Atom Laboratory,
NASA Jet Propulsion Laboratory (JPL),
United States

Holger Mueller
Professor,
University of California, Berkeley,
United States

Ernst Rasel
Professor,
Institute of Quantum Optics, Leibniz University Hannover,
Germany

Sheng-Wey Chiow
Research Technologist,
NASA Jet Propulsion Laboratory (JPL),
United States

Jason Williams
Research Technologist,
NASA Jet Propulsion Laboratory (JPL),
United States

Babak Saif
Senior Optical Physicist,
NASA Goddard Space Flight Center,
United States

Matthew Squires
Senior Research Scientist,
Air Force Research Laboratory (AFRL),
United States

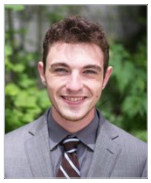
11:30 - 12:30 Launch Tower Not Necessary: Could Responsive Launch Revolutionize Spaceport Infrastructure Needs?

Room: 146A

Format: Panel Discussion

Organizers:

Sirisha Bandla
Government Affairs & Business Development Manager,
Virgin Orbit,
United States



Cody Knipfer
Government Affairs Specialist,
Virgin Orbit,
United States

Launch Tower Not Necessary: Could Responsive Launch Revolutionize Spaceport Infrastructure Needs?

If you don't need a launch tower to support a launch vehicle, what might an ideal spaceport look like? What opportunities – and challenges – might it create? And what new opportunities for infrastructure use might it involve? This interactive panel brings together mobile launch, air-launch, and spaceport operators to discuss the paths toward – and provider and operator needs and requirements of – "responsive" spaceports.

Facilitators:

Dan Hart
CEO,
Virgin Orbit,
United States

Richard DalBello
Vice President, Government Affairs,
Virgin Orbit,
United States

Speakers:

Karina Dress
CEO & General Manager,
Mojave Air & Space Port,
United States

Miles Carden
Spaceport Director,
Spaceport Cornwall,
United Kingdom

Wayne Monteith
Associate Administrator for Commercial Space Transportation,
Federal Aviation Administration Office of Commercial Space Transportation (FAA-AST),
United States

Nina Armagno
Space Programs Director,
United States Air Force,
United States

12:45 - 13:45 Transforming Future Mission Design Through In-Space Manufacturing

Room: 146A

Format: Panel Discussion

Organizer:

Justin Kugler
Vice President, Advanced Programs and Concepts,
Made In Space, Inc.,
United States

Transforming Future Mission Design Through In-Space Manufacturing

In-space manufacturing technology is poised to transform how we develop next-gen platforms in space. Future satellites and space stations could all be built exclusively in space and the technology to achieve this is being developed now. Join us for a robust discussion on the opportunities, applications, and roadblocks related to new technologies that could reshape the future of space infrastructure.

Facilitators:

Justin Kugler
Vice President, Advanced Programs and Concepts,
Made In Space, Inc.,
United States

Kevin DiMarzio
Vice President, Business Development,
Made In Space, Inc.,
United States

Speaker:

Raymond G. Clinton Jr.
Associate Director,
Science and Technology Office,
NASA Marshall Space Flight Center,
United States

14:00 - 15:00 Interstellar Probe: Humanity's First Deliberate Step into the Galaxy by 2030

Room: 146A

Format: Panel Discussion

Organizer:

Ralph L. McNutt, Jr.
Chief Scientist for Space Science, Johns Hopkins University Applied Physics Laboratory (APL), United States

Interstellar Probe: Humanity's First Deliberate Step into the Galaxy by 2030

This special session is focused on humanity's first deliberate step beyond the solar system and into interstellar space. Specialist panel participants will provide their thoughts on the challenges of and need for such an undertaking. Audience participation will be encouraged for at least half of the session time to open up discussion on this undertaking throughout the international astronautics community. Discussions will include topics of science, engineering, management, space policy, and international cooperation.

Facilitators:

Pontus C. Brandt
Assistant Group Supervisor, Space Exploration Sector, Johns Hopkins University Applied Physics Laboratory (APL), United States

Michael V. Paul
Interstellar Probe Study Project Manager, Johns Hopkins University Applied Physics Laboratory (APL), United States

Speakers:

Stamatios M. Krimigis
Space Department Head Emeritus, Johns Hopkins University Applied Physics Laboratory (APL), United States

Leon Alkalai
Fellow and Manager Office of Strategic Planning, NASA Jet Propulsion Laboratory (JPL), United States

Michel Blanc
Professor, Institut de Recherche en Astrophysique et Planétologie (IRAP), France

Robert F. Wimmer-Schweingruber
Director, Institute of Experimental and Applied Physics, University of Kiel, Germany

Stanislav Barabash
Director, Swedish Institute of Space Physics, Sweden

6 Interactive Presentations

6.1 Category Coordinators and Members of the IP Award Committee

Chairman of the Interactive Presentations Award Committee

Christophe Bonnal
Centre National d'Études Spatiales (CNES),
France

Category A SCIENCE AND EXPLORATION

Maria-Antonietta Perino
Thales Alenia Space,
Italy

Category B APPLICATIONS AND OPERATIONS

Otto Koudelka
Graz University of Technology (TU Graz),
Austria

Category C TECHNOLOGY

Li Ming
China Academy of Space Technology (CAST),
China

Category D INFRASTRUCTURE

John-David Bartoe
Association of Space Explorers (ASE),
United States

Category E SPACE AND SOCIETY

Lyn Wigbels
American Astronautical Society (AAS),
United States

6.2 Interactive Presentations Award Ceremony & Cocktail Reception

Date: Thursday 24 October

Time: 12:45 - 13:15

Location: Exhibition Hall - IP Area

Held on the fourth day of IAC, the IP Award Ceremony is the must-attend event of the congress.

Discover the 5 category winners at this prestigious ceremony attended by the presenters, Members of the International Programme Committee and delegates. The prize-giving ceremony will be followed by a cocktail to meet and celebrate the winners. All the interactive presentations will be presented after the ceremony at 13:15.

Do not miss out on this great opportunity to meet with the presenters and make new connections.

Please note that this event is open to all IAC participants.

6.3 Interactive Presentations Session

Date: Thursday 24 October

Time: 13:15 - 14:45

Location: Exhibition Hall - IP Area

The Interactive Presentations Session is a dynamic forum that allows presenters and participants to engage in in-depth discussions about the presented work from which new collaborations, ideas, and solutions can emerge. Interactive presentations include multimedia, such as audio and video, as well as images and animations. Their flexibility helps foster presenters' creativity and skills, and provides a platform for building engaging, collaborative, and visually powerful presentations.

Presentations in the session will be conducted simultaneously, with each presenter informed of their specific presentation screen and time slot. Each presenter has 10 minutes to present to their audience with Q&A, moderation by the Session Chairs, and transition time included; and it is up to the presenter to choose how much of that time to put toward questions in their presentation.

6.4 Interactive Presentations by Symposium

IP	Symposia
A1	IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM
A2	IAF MICROGRAVITY SCIENCES SND PROCESSES SYMPOSIUM
A3	IAF SPACE EXPLORATION SYMPOSIUM
A4	48th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – THE NEXT STEPS
A5	22nd IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM
A6	17th IAA SYMPOSIUM ON SPACE DEBRIS
A7	IAF SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS
B1	IAF EARTH OBSERVATION SYMPOSIUM
B2	IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM
B3	IAF HUMAN SPACEFLIGHT SYMPOSIUM
B4	26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS
B6	IAF SPACE OPERATIONS SYMPOSIUM
C1	IAF ASTRODYNAMICS SYMPOSIUM
C2	IAF MATERIALS AND STRUCTURES SYMPOSIUM
C3	IAF SPACE POWER SYMPOSIUM
C4	IAF SPACE PROPULSION SYMPOSIUM
D1	IAF SPACE SYSTEMS SYMPOSIUM
D2	IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM
D3	17th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT
D4	17th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE
D5	52nd IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES
E1	IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM
E3	32nd IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS
E5	30th IAA SYMPOSIUM ON SPACE AND SOCIETY
E6	IAF BUSINESS INNOVATION SYMPOSIUM
E7	IISL COLLOQUIUM ON THE LAW OF OUTER SPACE

6.5 Interactive Presentations Schedule

SCREEN #1

13:15-13:25 IAC-19/A1/IP.1
COMPUTER-BASED BEHAVIORAL HEALTH COUNTERMEASURE EVALUATION DURING AN ANTARCTIC WINTER-OVER POPULATION AS SPACE ANALOGUE
Ms. Mackenzie Haberman, Dartmouth Medical School , United States

13:25-13:35 IAC-19/A1/IP.2
TIME-SERIES CHANGE IN INTERPERSONAL RELATIONSHIPS AND MENTAL HEALTH: 15-DAYS CONFINEMENT STUDY IN JAPAN.
Dr. Yuichi OI, University of Tsukuba, Japan

13:35-13:45 IAC-19/A1/IP.3
GENDER- AND VALUES-BASED FAULTLINES AS A PREDICTOR OF CREW RELATIONS
Ms. Tatem Burns, DePaul University, United States

13:45-13:55 IAC-19/A1/IP.4
IMMERSIVE NATURAL SCENES USING VIRTUAL REALITY FOR RESTORATION IN ISOLATED CONFINED ENVIRONMENTS
Dr. Aleksandra Stankovic, Dartmouth College, United States

13:55-14:05 IAC-19/A1/IP.5
RESULTS FROM HI-SEAS LONG DURATION MARS ANALOG SIMULATIONS
Mr. Simon Engler, University of Hawaii, United States

14:05-14:15 IAC-19/A1/IP.6
NASA HUMAN EXPLORATION RESEARCH ANALOG (HERA) RESEARCH STUDY ASSESSES CREW FITNESS FOR LONG-DURATION SPACE TRAVEL
Mrs. Jonna Ocampo, , United States

14:15-14:25 IAC-19/A1/IP.7
TEAM PERFORMANCE ANALYSIS OF A COLLABORATIVE SPATIAL ORIENTATION MISSION IN MARS ANALOGUE ENVIRONMENT
Mr. Baptiste Prébot, Laboratoire Intégration du Matériau au Système, France

14:25-14:35 IAC-19/A1/IP.9
BODY WEIGHT MAY PLAY A ROLE IN OCULAR PRESSURE IN SPACE: EVIDENCE FROM OBESITY STUDIES
Dr. Jay Buckey, Dartmouth Medical School , United States

14:35-14:45 IAC-19/A1/IP.10
CARDIOVASCULAR DECONDITIONING DURING TWO MONTHS OF BED REST: COMPARISON OF WEARABLE MONITORING BASED ON BALLISTO- AND SEISMO-CARDIOGRAPHY WITH MRI
Mr. Jeremy Rabineau, Université Libre de Bruxelles, Belgium

SCREEN #2

13:15-13:25 IAC-19/A1/IP.11
UPGRADE THE CENTRIFUGAL MULTIPLE-EFFECT DISTILLER FOR DEEP SPACE MISSIONS
Prof. Vladimir Rifert, TERMODISTILLATION, Ukraine

13:25-13:35 IAC-19/A1/IP.12
DIGITAL IMAGE PROCESSING AND METABOLIC PARAMETER LINEARITY TO NON-INVASIVELY DETECT ANALYTE CONCENTRATION
Mr. Joseph Allen Jr., University of North Dakota, United States

13:35-13:45 IAC-19/A1/IP.13
BIOTECHNOLOGICAL STRATEGIES FOR SUSTAINED HUMAN PRESENCE ON MARS
Ms. Jaden Hastings, University of Melbourne, Australia

13:45-13:55 IAC-19/A1/IP.14
MOON DUST AND THE HUMAN EXPLORATION OF THE MOON - 2ND NESC LUNAR DUST WORKSHOP
Dr. Daniel Winterhalter, Jet Propulsion Laboratory - California Institute of Technology, United States

SCREEN #3

13:15-13:25 IAC-19/A2/IP.1
OPTIMAL DEPLOYMENT SIMULATION FOR VARIOUS GRAVITATIONAL WAVE MISSIONS
Dr. An-Ming Wu, National Space Organization, Taipei

13:25-13:35 IAC-19/A2/IP.3
MATHEMATICAL ANALYSIS ON THE SIMULATED MICROGRAVITY RESULTING FROM THE RANDOM POSITIONING MACHINE
Prof. Taig Young Kim, Korea Polytechnic University, Korea, Republic of

13:35-13:45 IAC-19/A2/IP.6
DESIGN, CALIBRATION AND EXPERIMENTATION WITH SEEDS IN A RPM
Mr. Pablo Serralta, LEEM - Laboratory for Space and Microgravity Research, Spain

13:45-13:55 IAC-19/A2/IP.7
ENDOTHELIAL CELL CULTURING IN A RANDOM POSITIONING MACHINE WITH A CULTURE CHAMBER
Mr. HEERAK KIM, Korea Polytechnic University, Korea, Republic of

14:05-14:15 IAC-19/A7/IP.3
KNOWLEDGE UTILIZATION AND OPEN SCIENCE POLICIES: NOBLE AIMS THAT ENSURE QUALITY RESEARCH OR "ORDERING DISCOVERIES LIKE A PIZZA"?
Ms. Julia Heuritsch, Humboldt University of Berlin, Germany

14:15-14:25 IAC-19/A7/IP.4
RADIO FREQUENCY INTERFERENCE: USING DEEP LEARNING TOOLS TO MITIGATE THE IMPACT TO SPACE OPERATIONS
Mr. Zaid Rana, European Space Agency (ESA), Canada

SCREEN #4

3:15-13:25 IAC-19/A3/IP.1
LUNAR LANDING-AND-TAKEOFF VEHICLE
Mr. Olexandr Kashanov, Yuzhnoye State Design Office, Ukraine

13:25-13:35 IAC-19/A3/IP.3
THE PRIMARY LOCATIONS AND SETTLEMENT STRATEGIES OF INTEREST FOR FUTURE LUNAR BASES
Ms. Xiaochen Zhang, University of Western Ontario (UWO), Canada

13:35-13:45 IAC-19/A3/IP.4
HAWAIIAN BASALT CHARACTERIZATION AND THE EFFECTS OF CHEMICAL COMPOSITION VARIANCES ON THE SINTERING PROCESS; POTENTIAL IMPLICATIONS FOR LUNAR/MARS ISRU APPLICATIONS.
Ms. Kyla Defore, , United States

13:45-13:55 IAC-19/A3/IP.5
IMPLEMENTATION OF LOW-POWER, WIDEBAND SYNTHETIC APERTURE RADAR FOR PRIMITIVE BODY RECONNAISSANCE APPLICATIONS
Mrs. Katelyn Kufahl, The John Hopkins University Applied Physics Laboratory, United States

13:55-14:05 IAC-19/A3/IP.6
INTERACTIVE PLANETARY VISUALIZATION AND ANALYSIS WITH NASA'S SOLAR SYSTEM TREKS PORTALS
Ms. Emily Law, Jet Propulsion Laboratory - California Institute of Technology, United States

14:05-14:15 IAC-19/A3/IP.7
THE USC ADAM PROJECT: ADVANCED DEVELOPMENTAL ARCHITECTURES FOR OUR MOON
Mr. Madhu Thangavelu, University of Southern California, United States

14:15-14:25 IAC-19/A3/IP.8
REGOLITH MINING IN SHACKLETON CRATER: PROPELLANT, BUILDING MATERIALS AND VITAL RESOURCES PRODUCTION FOR A LONG DURATION MANNED MISSION
Mr. Lorenzo Rabagliati, International Master SEEDS, Italy

14:25-14:35 IAC-19/A3/IP.12
MISSION CONCEPT FOR LUNAR LOW FREQUENCY ANTENNAS FOR RADIO ASTRONOMY (LUFAR)
Mr. Maneesh Kumar Verma, Delft University of Technology (TU Delft), The Netherlands, The Netherlands

SCREEN #5

13:15-13:25 IAC-19/A3/IP.13
PLEXNET - A DISTRIBUTED, VARIABLE-AUTONOMY ARCHITECTURE FOR EXPLORATION OF PLANETARY BODIES
Mr. Zhong Thai, Purdue University, United States

13:25-13:35 IAC-19/A3/IP.14
JUMP ROBOT WITH TETHER FOR LUNAR VERTICAL HOLE EXPLORATION
Ms. Karin Kushida, Aoyama Gakuin University, Japan

13:35-13:45 IAC-19/A3/IP.15
FROM DUST TO GAS, LEAP2 TECHNOLOGIES FOR LUNAR SITE DEVELOPMENT AT THE MARIUS HILLS SKYLIGHT
Mr. Samuel Ximenes, WEX Foundation, United States

13:45-13:55 IAC-19/A3/IP.16
THE GLACIER PROJECT IN THE IGLUNA ESA LAB DEMONSTRATOR PROJECT
Mrs. Julia Wajoras, Students Space Association, Warsaw University of Technology, Poland

13:55-14:05 IAC-19/A3/IP.18
LUNAR ORBITAL PLATFORM-GATEWAY (LOP-G) AS AN OPPORTUNITY TO TEST TECHNOLOGIES APPLICABLE TO THE ROBOTIC AND CREWED EXPLORATION OF BOTH MOON AND MARS
Ms. Anne-Marlene Rüede, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

14:05-14:15 IAC-19/A3/IP.19
CISLUNAR AUTONOMOUS NAVIGATION USING MULTI-GNSS AND GNSS-LIKE AUGMENTATIONS: CAPABILITIES AND BENEFITS
Dr. Benjamin Ashman, National Aeronautics and Space Administration (NASA), United States

14:15-14:25 IAC-19/A3/IP.20
IN-SITU RESOURCES UTILISATION (ISRU): USING SWARM ROBOTICS TO OPTIMISE THIS KEY TECHNOLOGY FOR FUTURE SUSTAINABLE LUNAR EXPLORATION
Mr. André Fonseca Prince, ISU, Italy

14:25-14:35 IAC-19/A3/IP.21
SETTING UP AN EARTH MOON GONDOLA FROM THE MOON VILLAGE
Mr. Jean-Yves Prado, PLATINEO, France

14:35-14:45 IAC-19/A3/IP.22
DEVELOPMENT AND TEST OF A FOLDABLE PROTECTION SYSTEM FOR A SMALL LANDING PROBE USING 3D-PRINTED METAL GRIDS AS SHOCK ABSORBER
Mr. Silvio Schröder, German Aerospace Center (DLR), Bremen, Germany

SCREEN #6

13:15-13:25 IAC-19/A4/IP.1
TECHNOSEARCH.SETI.ORG: THE POWER OF THE PAST; THE PROMISE OF THE FUTURE
Dr. Jill Tarter, SETI Institute, United States

13:25-13:35 IAC-19/A4/IP.3
THE SEARCH FOR RESOURCE EXTRACTION TECHNOSIGNATURES IN THE SOLAR SYSTEM
Ms. Lori Walton, Tigerstar Geoscience, Canada

13:45-13:55 IAC-19/A5/IP.3
FINDING TRAJECTORIES TO SEND A SPACECRAFT TO AN ASTEROID TO CHANGE ITS ORBIT AROUND THE SUN
Prof. Geraldo Magela Couto Oliveira, Federal Center for Technological Education of Minas Gerais, Brazil

13:55-14:05 IAC-19/A5/IP.4
OXYGEN PRODUCTION ON MARS WITH IN-SITU RESOURCE UTILIZATION
Ms. Alina Kunitskaya, University of British Columbia, Canada

14:05-14:15 IAC-19/A5/IP.5
PERISCOPE: PERIAPSIS SUBSURFACE CAVE OPTICAL EXPLORER; LUNAR CAVE CHARACTERIZATION FROM ORBIT
Mr. Jeffrey Nosanov, Nosanov Consulting, United States

14:15-14:25 IAC-19/A5/IP.9
ADVANCED MONITORING SYSTEM FOR MARS COLONIZATION
Mr. Hitesh Kumar Tetarwal, University of Petroleum and Energy Studies, India

SCREEN #7

13:15-13:25 IAC-19/A6/IP.1
DEVELOPMENT OF A UK NATIONAL IN-ORBIT SERVICING FACILITY
Ms. Alexandra Gravereaux, Astroscale Ltd, United Kingdom

13:25-13:35 IAC-19/A6/IP.2
RESEARCH ON COMMERCIAL OPERATION OF SPACE DEBRIS REMOVAL BASED ON LIABILITY INCENTIVES AND ECONOMIC INCENTIVES
Mrs. Xia Yu, China Academy of Launch Vehicle Technology(CALT), China

13:35-13:45 IAC-19/A6/IP.4
GROUND OPERATION EXPERIMENTAL SYSTEM AND OPERATION EXPERIMENT OF SPACE DEBRIS WITH LASERS
Prof. Zizheng Gong, Beijing Institute of Spacecraft Environment Engineering, China Academy of Space Technology (CAST), China

13:45-13:55 IAC-19/A6/IP.5
THE IMPACT OF LARGE CONSTELLATIONS ON SPACE DEBRIS ENVIRONMENT AND ITS COUNTERMEASURES
Prof. Zizheng Gong, Beijing Institute of Spacecraft Environment Engineering, China Academy of Space Technology (CAST), China

13:55-14:05 IAC-19/A6/IP.6
BLOCKCHAIN ENABLED SPACE TRAFFIC AWARENESS (BESTA)
Mr. Harvey Reed, The MITRE Corporation, United States

14:05-14:15 IAC-19/A6/IP.7
DESIGN AND SIMULATIONS OF A PHASED ARRAY FEED FOR THE BIRALET RADAR.
Dr. Tonino Pisanu, National Institute for Astrophysics, Italy

14:15-14:25 IAC-19/A6/IP.8
IMPROVING LEO DEBRIS DRAG PREDICTION BY INFERRING SPIN AXIS
Mr. Joseph Carroll, Tether Applications, Inc., United States

14:25-14:35 IAC-19/A6/IP.9
A LONG-TERM DYNAMICAL EVOLUTION OF LARGE SATELLITE CONSTELLATION AND SPACE DEBRIS PROBLEM
Prof. Eduard Kuznetsov, Ural Federal University, Russian Federation

SCREEN #8

13:15-13:25 IAC-19/A6/IP.10
RESEARCH ON PATH PLANNING OF FREE-FLOATING SPACE ROBOT BASED ON DUAL MODE SWITCHING
Prof. Zhanxia Zhu, National Key Laboratory of Aerospace Flight Dynamics,Northwestern Polytechnical University,Xi'an, China

13:25-13:35 IAC-19/A6/IP.11
DEEP LEARNING BASED SPACE DEBRIS CAPTURE SCORING STUDY IN ON-ORBIT PROXIMITY OPERATION
Mr. Seongmin Lim, Korea University of Science & Technology (UST),

13:35-13:45 IAC-19/A6/IP.12
DESIGN AND TEST OF DRAG AUGMENTATION SYSTEM FOR DE-ORBITING KARDSAT NANO-SATELLITE
Mr. Ji-Seok Kim, Korea University of Science & Technology (UST),

13:45-13:55 IAC-19/A6/IP.13
COLLISION RISK ASSESSMENT FOR THE PROPOSED LARGE CONSTELLATIONS
Dr. Alexis Petit, IFAC-CNR, Italy

13:55-14:05 IAC-19/A6/IP.18
MODEL OF ATMOSPHERIC DENSITY GRADIENT TORQUE ACTED ON TIANGONG-1
Dr. Hou-Yuan Lin, Purple Mountain Observatory, Chinese Academy of Sciences, China

14:05-14:15 IAC-19/A6/IP.20
AI TO SUPPORT DECISION MAKING IN COLLISION RISK ASSESSMENT
Prof. Massimiliano Vasile, University of Strathclyde, United Kingdom

14:15-14:25 IAC-19/A6/IP.21
SMARTNET AND BACARDI
Dr. Hauke Fiedler, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

14:25-14:35 IAC-19/A6/IP.22
BLOWING SPACE JUNK CLOUDS AWAY: THE COMPLIANCE OF RECOMMENDATIONS TO A SPACE DEBRIS REMOVAL NEW CONCEPT.
Ms. Maria Messina, Italian Space Agency (ASI), Italy

SCREEN #9

13:15-13:25 IAC-19/B1/IP.1
A NEW FLOOD MAPPING SERVICE FROM OPERATIONAL POLAR AND GEOSTATIONARY ORBITING SATELLITES.
Dr. Mitchell Goldberg, NOAA/NESDIS, United States

13:25-13:35 IAC-19/B1/IP.4
AUTOMATIC SHIP DETECTION FROM HIGH RESOLUTION SATELLITE IMAGES BASED ON A DEEP CONVOLUTIONAL NEURAL NETWORK (DCNN) MODEL
Mr. Saeed Al Mansoori, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

13:35-13:45 IAC-19/B1/IP.5
MICROWAVE OBSERVATIONS OF MESOSPHERIC OZONE LOSS OVER ANTARCTICA ASSOCIATED WITH PARTICLE PRECIPITATION
Ms. Elise Wright Knutsen, National Aeronautics and Space Administration (NASA), United States

13:45-13:55 IAC-19/B1/IP.6
RADIOPHYSICAL RELATIVISTIC GRAVIMETER
Dr. Sergiy Matviyenko, JSC "RPC "KURS", Ukraine

13:55-14:05 IAC-19/B1/IP.7
INITIAL CALIBRATION AND VALIDATION RESULTS OF KHALIFASAT IMAGES
Mrs. Asmaa AlJanaahi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

SCREEN #10

13:15-13:25 IAC-19/B1/IP.9
DATA MANAGEMENT AND STEWARDSHIP MATURITY MATRIX SUPPORTING DATA CURATOR
Mr. Luca Fasano, Italian Space Agency (ASI), Italy

13:25-13:35 IAC-19/B1/IP.10
SMALL SATELLITES AND UAV: A COLLABORATION FOR BETTER DEVELOPMENT IN EARTH OBSERVATION ACTIVITIES IN AFRICA
Mr. Abraham Akinwale, Space Generation Advisory Council (SGAC), Nigeria

13:35-13:45 IAC-19/B1/IP.11
HEURISTIC SCHEDULING FOR MULTI-AGILE SATELLITE BASED ON ADAPTIVE GENETIC ALGORITHM
Mrs. Lili Ren, National Key Laboratory of Aerospace Flight Dynamics,Northwestern Polytechnical University,Xi'an,, China

13:45-13:55 IAC-19/B1/IP.12
MONITORING AND PREDICTING THE LAND USE AND LAND COVER CHANGES FROM MULTI-TEMPORAL DUBAISAT-2 DATA USING REMOTE SENSING AND GIS TECHNIQUES – A CASE STUDY OF AL MARMOOM DESERT CONSERVATION RESERVE
Ms. Shaikha AlBesher, , United Arab Emirates

13:55-14:05 IAC-19/B1/IP.14
THE USE OF VIRTUAL GROUND STATION TO SUPPORT MIDDLE AND HIGH SCIENCE EDUCATION IN INDIA
Mr. Anirudh N Sharma, Lovely Professional University, India

SCREEN #11

13:15-13:25 IAC-19/B2/IP.3
AN INTEGRATED SOFTWARE DEFINED RADIO AND BEAM-TRACKING ANTENNA FOR LAUNCH VEHICLES
Mr. Tayo Shonibare, C6 Launch Systems, Canada

13:25-13:35 IAC-19/B2/IP.4
DESIGN OF A FULL DUPLEX CUBESAT COMMUNICATIONS SYSTEM FOR AMATEUR RADIO OPERATION
Mr. Sawyer Rempel, University of Manitoba, Canada

13:35-13:45 IAC-19/B2/IP.8
EVENTECH EVENT TIMER FOR SPACE APPLICATIONS
Mr. Pavels Razmajevs, [unlisted], Latvia

13:45-13:55 IAC-19/B2/IP.10
KALMAN FILTERING FOR SINS/GNSS INTEGRATED NAVIGATION OF LONG RANGE CRUISING VEHICLES
Mr. Xuanbo Wei, Northwestern Polytechnical University, China

13:55-14:05 IAC-19/B2/IP.11
BASIC NAVIGATION MESSAGE PARAMETERS COMPARISON BETWEEN BDS2 AND BDS3
Mrs. Jie Xin, Engineer, China

SCREEN #12

13:15-13:25 IAC-19/B3/IP.1
ADJUSTABLE IVA SPACESUIT ERGONOMICS – UPPER BODY MOTION ENVELOPE REFERENCE MODEL
Dr. Ondrej Doule, Florida Institute of Technology, United States

13:25-13:35 IAC-19/B3/IP.2
AN EYE ON THE HORIZON: ANALOG MARS ROVER LOCALIZATION AND ASTRONAUT DETECTION
Mr. Bradley Hoffmann, University of North Dakota, United States

13:35-13:45 IAC-19/B3/IP.3
ASTRONAUT RESILIENCE TRAINING FOR THE FUTURE MANNED SPACE MISSION
Mrs. Yumi Ohama, Japan Manned Space Systems Corporation (JAMSS), Japan

13:45-13:55 IAC-19/B3/IP.5
EXPERIENCE FROM A FOUR CREW MARS SIMULATION MISSION:A POSSIBLE INVESTIGATION FOR FUTURE SPACEFLIGHT MISSION
Ms. Sonal Baberwal, , France

13:55-14:05 IAC-19/B3/IP.7
THE COMMERCIAL SPACE INVOICE: HOW DOES THE GENERAL PUBLIC AFFORD FUTURE SPACE PARTICIPATION?
Ms. Yvette Marie Gonzalez, Moon Village Association (MVA), United States

SCREEN #13

13:15-13:25 IAC-19/B4/IP.2
NANOFF: A 2U-CUBESAT FORMATION FLIGHT MISSION
Mr. Nikolas Korn, Technische Universität Berlin, Germany

13:25-13:35 IAC-19/B4/IP.3
THE BUSINESS IMPERATIVE FOR MODULARITY IN COMMUNICATIONS SATELLITES
Mr. Caleb Williams, SpaceWorks Enterprises, Inc., United States

13:35-13:45 IAC-19/B4/IP.4
FLIGHT RESULTS OF AN ADVANCED MULTIBAND COMMUNICATION SDR PAYLOAD IN LUME-1 SATELLITE
Mr. Alberto González-Muiño, University of Vigo, Spain

13:45-13:55 IAC-19/B4/IP.5
CERES PROJECT - CONSTELLATION OF CUBESATS FOR PRECISION AGRICULTURE IN BRAZIL
Mr. Victor Baptista, Universidade de Brasília, Brazil

13:55-14:05 IAC-19/B4/IP.6
PLATINO PLATFORM: AN INNOVATIVE ITALIAN ALL ELECTRIC SMALL SATELLITE PLATFORM
Ms. Beatrice Sabbatinelli, Sitael Spa, Italy

14:05-14:15 IAC-19/B4/IP.8
FIRST IN-ORBIT RESULTS FROM KAZSTSAT
Dr. Vladimir Ten, Ghalam LLP, Kazakhstan

14:15-14:25 IAC-19/B4/IP.9
OPEN-MODULAR ARCHITECTURE OF “BAUMANETS 3” SMALL SPACECRAFT
Dr. Georgy Shcheglov, Bauman Moscow State Technical University, Russian Federation

14:25-14:35 IAC-19/B4/IP.10
THE OPEN SOURCE SATELLITE PROGRAMME: DEVELOPING AN INNOVATIVE, LOW-COST, GENERIC MICROSATELLITE PLATFORM TO ADVANCE NEW MISSION IDEAS FROM THEORETICAL POSSIBILITY TO COMMERCIALLY-SUSTAINABLE REALITY
Dr. John Paffett, KISPE Space Systems Limited, United Kingdom

14:35-14:45 IAC-19/B4/IP.12
IRAS: PROGRESS IN DEVELOPMENT OF THE DIGITAL CONCURRENT ENGINEERING PLATFORM, SOFTWARE TOOLS AND INNOVATIVE TECHNOLOGIES
Mr. Manfred Ehresmann, Institute of Space Systems, Universität Stuttgart, Germany

SCREEN #14

13:15-13:25 IAC-19/B4/IP.13
IMPROVING CUBESAT OPERATIONS USING FLIGHT PERFORMANCE TELEMETRY
Mr. Johan Carvajal-Godinez, Costa Rica Institute of Technology (ITCR), Costa Rica

13:25-13:35 IAC-19/B4/IP.14
ASTROSCALE’S VISION FOR HOLO-VIRTUALIZED AUGMENTED REALITY FOR ELSA-D ASSEMBLY, INTEGRATION AND TESTING
Dr. Jason Forshaw, Astroscale Ltd, United Kingdom

13:35-13:45 IAC-19/B4/IP.16
IMPROVED CUBESAT MISSION RELIABILITY USING A RIGOROUS TOP-DOWN SYSTEMS-LEVEL APPROACH
Mr. Rahul Rughani, University of Southern California, United States

13:45-13:55 IAC-19/B4/IP.18
MISSION-ORIENTED DESIGN FOR NANOSATELLITES USING INNOVATIVE TOOLS AND PLATFORMS: BEEAPP AND BEEKIT
Mr. Daniel Sors Raurell, Open cosmos Ltd., United Kingdom

13:55-14:05 IAC-19/B4/IP.20
AN OPTIMIZATION APPROACH FOR DESIGNING OPTIMAL TRACKING CAMPAIGNS FOR LOW-RESOURCES DEEP-SPACE MISSIONS
Mr. Lorenzo Gentile, TH Köln, Germany

14:05-14:15 IAC-19/B4/IP.21
WRITING WITH SUNLIGHT: CUBESAT FORMATION CONTROL USING AERODYNAMIC FORCES
Dr. Dmitry Pritykin, Skolkovo Institute of Science and Technology, Russian Federation

14:15-14:25 IAC-19/B4/IP.22
ADVANCES IN THE UCH-SAT NANOSATELLITE DESIGN USING COMMERCIAL ELECTRONICS DEVICES
Dr. Avid Roman-Gonzalez, Image Processing Research Laboratory (INTI-Lab). Universidad de Ciencias y Humanidades - UCH, Peru

14:25-14:35 IAC-19/B4/IP.23
AUTOMATED ONBOARD MISSION PLANNING FOR ROBUST AND FLEXIBLE SPACECRAFT OPERATIONS
Mr. Thomas Cunningham, Purdue University, United States

14:35-14:45 IAC-19/B4/IP.24
ON-BOARD MANAGEMENT OF AUTONOMOUS FORMATION FLYING SMALLSATS IN PROBA-3 MISSION
Mr. Sergio Tiraplegui Riveras, SENER Ingenieria y Sistemas, S.A., Spain

SCREEN #15

13:15-13:25 IAC-19/B4/IP.25
CYGNSS SMALL SATELLITE GNSS-R CONSTELLATION MISSION FOR OCEAN SCIENCE APPLICATION
Ms. Rajeswari Balasubramaniam, University of Michigan, Ann Arbor, United States

13:25-13:35 IAC-19/B4/IP.26
PLUG AND FLY
Mr. Saish Sridharan, Space Products and Innovation, Germany

13:35-13:45 IAC-19/B4/IP.29
ENABLING ATTITUDE ACTUATOR FOR SMALL SATELLITES PROXIMITY OPERATIONS
Mr. Daniele Luchena, ARCA Dynamics, Italy

13:45-13:55 IAC-19/B4/IP.30
HOSTED PAYLOADS ON COMMERCIAL SATELLITES
Mr. Yilkal Eshete, Ethiopian Space Science and Technology Institute (ESSTI), Ethiopia

13:55-14:05 IAC-19/B4/IP.33
INVERSE REINFORCEMENT LEARNING FOR COLLISION AVOIDANCE AND TRAJECTORY PREDICTION IN DISTRIBUTED RECONFIGURATIONS
Mr. Stefano Silvestrini, Politecnico di Milano, Italy

14:05-14:15 IAC-19/B4/IP.34
SIMULATING DISTRIBUTED SMALL SATELLITE NETWORKS: A MODEL-BASED TOOL TAILORED TO DECENTRALIZED RESOURCE-CONSTRAINED SYSTEMS
Mr. Carles Araguz, Technical University of Catalonia (UPC), Spain

SCREEN #16

13:15-13:25 IAC-19/B6/IP.1
SARDINIA DEEP SPACE ANTENNA: CURRENT PROGRAM STATUS AND RESULTS
Dr. Giuseppe Valente, Italian Space Agency (ASI), Italy

13:25-13:35 IAC-19/B6/IP.2
ON IMPROVING AN EMBEDDED SOLUTION FOR THE ASAP AUTONOMOUS PLANNING SYSTEM
Mr. Anselm Krainovic, University of Würzburg, Germany

13:35-13:45 IAC-19/B6/IP.3
ARTIFICIAL INTELLIGENCE MEETS MISSION CONTROL: THEORY AND APPLICATION OF DYNAMIC BAYESIAN NETWORKS
Ms. Lilli Bullinger, Goethe University Frankfurt, Germany

13:45-13:55 IAC-19/B6/IP.4
ONBOARD ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FOR ENHANCING SMALLSAT CONSTELLATIONS
Mr. Christopher Heistand, The John Hopkins University Applied Physics Laboratory, United States

13:55-14:05 IAC-19/B6/IP.7
CUBESAT ENERGY MODELLING FOR IMPROVED MISSION PLANNING AND OPERATIONS
Mr. Andreas Freimann, University of Würzburg, Germany

SCREEN #17

13:15-13:25 IAC-19/B6/IP.8
AUTOMATIC MISSION PLAN GENERATOR SYSTEM
Mr. Salvador Daniel Escobedo Casillas, University of Guadalajara, Mexico

13:25-13:35 IAC-19/B6/IP.9
USING UX DESIGN TECHNIQUES TO INCREASE THE EFFICIENCY AND CONFIDENCE OF MISSION OPERATORS
Mr. Sean Stellingwerff, Telespazio VEGA Deutschland GmbH, Germany

13:35-13:45 IAC-19/B6/IP.10
THE ANALYSIS AND POTENTIAL OF HIGH RELIABILITY ORGANIZATION PRINCIPLES IN NOAA SATELLITE OPERATIONS
Mr. Jason Long, National Oceanic and Atmospheric Administration (NOAA), United States

13:45-13:55 IAC-19/B6/IP.11
OPTIMIZED CONTACT SCHEDULING FOR NOAA SEARCH AND RESCUE
Ms. Ella Herz, Orbit Logic, United States

13:55-14:05 IAC-19/B6/IP.13
GEOSTATIONARY SATELLITE LIFETIME MAXIMIZATION BY CONTROLLING PROPELLANT TANK TEMPERATURES - AN OPERATIONAL CASE.
Mr. Henrique Oliveira da Mata, Comando de Operações Aeroespaciais, Brazil

SCREEN #18

13:15-13:25 IAC-19/C1/IP.3
MULTIPLE ENTRY TRAJECTORY SCENARIOS FOR RETURNING FROM THE MOON: ADVANTAGES AND DISADVANTAGES
Dr. Dmitriy Grishko, Bauman Moscow State Technical University, Russian Federation

13:25-13:35 IAC-19/C1/IP.4
REINFORCEMENT LEARNING FOR SPACECRAFT ATTITUDE CONTROL
Mr. FNU Vedant, University of Illinois, United States

13:35-13:45 IAC-19/C1/IP.5
THE HIGH PERFORMANCE SATELLITE DYNAMICS SIMULATOR (HPS): A MODULAR MATLAB/SIMULINK-BASED SIMULATION LIBRARY FOR GNC SYSTEMS DEVELOPMENT
Mr. René Schwarz, German Aerospace Center (DLR), Germany

13:45-13:55 IAC-19/C1/IP.7
ESA F-CLASS COMET INTERCEPTOR: A FIRST CLOSE-UP STUDY OF A DYNAMICALLY "NEW" OBJECT
Dr. Joan Pau Sanchez Cuartielles, Cranfield University, United Kingdom

13:55-14:05 IAC-19/C1/IP.10
CMOS BASED HIGH ACCURACY MINIATURIZED DIGITAL SUN SENSOR WITH OPTIMIZED ERROR COMPENSATION ON SONATE
Mr. Tom Baumann, University of Würzburg, Germany

14:05-14:15 IAC-19/C1/IP.11
HAYABUSA2 OPERATIONAL DESIGN AND EVALUATION OF MINERVAII-1A/B ROVERS DEPLOYMENT
Mr. Kent Yoshikawa, Japan Aerospace Exploration Agency (JAXA), Japan

14:15-14:25 IAC-19/C1/IP.14
MODELING AND SIMULATION OF POST-IMPACT DYNAMICS INTENDED FOR REAL-TIME IMPLEMENTATION ON SPACECRAFT ROBOTIC SERVICING AND ASSEMBLY MISSIONS
Mr. Anthony Wolosik, Naval Research Laboratory, United States

SCREEN #19

13:15-13:25 IAC-19/C1/IP.15
QUALITATIVE AND QUANTITATIVE CHARACTERISATION OF SOLUTIONS FOR THE LOW THRUST TRANSFER GTO TO GEO
Mr. Juan Carlos Bastante, OHB System AG-Bremen, Germany

13:25-13:35 IAC-19/C1/IP.16
DEVELOPMENT OF A HARDWARE-IN-THE-LOOP ATTITUDE CONTROL SIMULATOR FOR EIRSAT-1, A MAGNETICALLY ACTUATED 2U CUBESAT
Mr. Joseph Thompson, Student, Ireland

13:35-13:45 IAC-19/C1/IP.19
THE LIFETIME OF DUST PARTICLES IN THE PLUTO SYSTEM
Prof.Dr. Silvia Maria Giuliatti Winter, UNESP - Univ Estadual Paulista, Brazil

13:55-14:05 IAC-19/C3/IP.1
DEVELOPMENT OF CUBESAT ELECTRIC POWER SYSTEM SIMULATOR WITH COMPLEX GEOMETRY
Mr. Victor Perez, Iowa State University, United States

14:05-14:15 IAC-19/C3/IP.5
DEVELOPMENT OF A MODULAR LI-ION BATTERY FOR LEO SATELLITES
Mr. Valerio Giuliani, SAB AEROSPACE SRL, Italy

14:15-14:25 IAC-19/C3/IP.6
HARDWARE ARCHITECTURE OF ELECTRICAL POWER SYSTEM FOR 3U HYPERSPECTRAL IMAGING CUBESAT
Mr. Nihal Singh, Birla Institute of Technology and Science(BITS), India

SCREEN #20

13:15-13:25 IAC-19/C2/IP.1
SURFACE FUNCTIONALIZATION OF GRAPHENE PRIOR TO NANOPARTICLES TETHERING FOR TRI-FUNCTIONALITY IN BOTH ACIDIC AND ALKALINE MEDIA
Ms. Simranjit Grewal, The National AeroSpace Training And Research Center (THE NASTAR CENTER), United States

13:25-13:35 IAC-19/C2/IP.2
ON-ORBIT ADDITIVE MANUFACTURING OF PARABOLIC REFLECTORS VIA SOLAR PHOTOPOLYMERIZATION
Dr. Avishai Weiss, Mitsubishi Electric Research Laboratories (MERL), United States

13:35-13:45 IAC-19/C2/IP.3
GROUND SIMULATION SYSTEM FOR ACTIVE VIBRATION CONTROL BASED ON THE BIO-INSPIRED X-SHAPE STRUCTURE FOR FREE-FLOATING SPACECRAFT
Mr. Xin Wang, National Key Laboratory of Aerospace Flight Dynamics, Northwestern Polytechnical University, China

13:45-13:55 IAC-19/C2/IP.4
WIND TUNNEL DATA ANALYZING BY JAVAD SOFTWARE
Mr. Ali Malekzadeh, Sharif University of Technology, Iran

13:55-14:05 IAC-19/C2/IP.5
OPTIMIZING TOPOLOGY AND STACKING SEQUENCE IN LAMINATED COMPOSITE STRUCTURES
Mr. Chuan Luo, The John Hopkins University, United States

14:05-14:15 IAC-19/C2/IP.7
ENVIRONMENTAL ANALYSIS OF NANOROVERS IN A SWARM FOR LUNAR'S SCIENTIFIC MISSIONS
Mr. Jesús Manuel Muñoz Tejeda, Universidad Carlos III de Madrid, Spain

14:15-14:25 IAC-19/C2/IP.8
ANALYSIS OF INFLUENCES OF EXTERNAL COMPONENTS DURING VIBRATION TESTING OF CUBESATS
Mr. Andreas Johann Hörmer, Graz University of Technology (TU Graz), Austria

SCREEN #21

13:15-13:25 IAC-19/C2/IP.9
VIBRATION TEST FOR 7 TON-CLASS LIQUID PROPELLANT ROCKET ENGINE
Dr. Jinhyuk Kim, Korea Aerospace Research Institute (KARI), Korea, Republic of

13:25-13:35 IAC-19/C2/IP.10
THE BENEFICIATION OF LUNAR REGOLITH USING ELECTROSTATIC SEPARATION FOR SPACE RESOURCE UTILISATION
Mr. Joshua Rasera, Imperial College London, United Kingdom

13:35-13:45 IAC-19/C2/IP.12
INTEGRATION OF A REACTION WHEEL SYSTEM INTO A SOUNDING ROCKET TO INCREASE STABILITY AND PERFORMANCE
Mr. Harry Byers, The Ohio State University College of Engineering, United States

13:45-13:55 IAC-19/C2/IP.15
SENSOR COATINGS FOR HIGH-TEMPERATURE MEASUREMENTS IN SPACE APPLICATIONS
Ms. Marta Ferran Marques, Sensor Coating Systems Limited, United Kingdom

13:55-14:05 IAC-19/C2/IP.17
OPTIMAL DESIGN OF THE BACK TRUSS STRUCTURE FOR MINIMIZING THE DEFORMATION OF REFLECTOR UNDER GRAVITY
Mr. Tatsuki Kawai, Meijo University, Japan

14:05-14:15 IAC-19/C2/IP.18
THE INFLUENCE OF UNION DESIGN IN THRUST MEASUREMENT OF A TO D CATEGORY ROCKET MOTOR IN AN AMATEUR TEST BENCH. A CASE STUDY
Mr. Pablo Serralta, LEEM - Laboratory for Space and Microgravity Research, Spain

14:15-14:25 IAC-19/C2/IP.19
MULTI-OBJECTIVE OPTIMIZATION OF A SMALL LAUNCH VEHICLE AERODYNAMIC PAYLOAD FAIRING FOR MINIMUM DRAG AND MASS.
Mr. sadben khan, C6 Launch Systems, Canada

14:25-14:35 IAC-19/C2/IP.21
PW-SAT2 DEORBIT SAIL TEST CAMPAIGN AT DROP TOWER AND VERIFICATION ON ORBIT
Ms. Inna Uwarowa, Students Space Association, Warsaw University of Technology, Poland

SCREEN #22

13:15-13:25 IAC-19/C4/IP.2
PARAMETRIC PERFORMANCE EVALUATION OF LIQUID INJECTION THRUST VECTOR CONTROL IN HYBRID ROCKETS
Mr. Eunkwang Lee, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

13:25-13:35 IAC-19/C4/IP.5
PRELIMINARY DESIGN OF HIGH SPEED TEST FACILITY FOR COUNTERFLOW JET EXPERIMENTS REDUCING HEAT AND DRAG
Mr. Yuseok Lee, Chungnam National University,

13:35-13:45 IAC-19/C4/IP.9
DEVELOPMENT OF ADAPTABLE ELECTRODELESS PLASMA PROPULSION SYSTEMS USING EVOLUTIONARY TOPOLOGY OPTIMISATION AND PARTICLE IN CELL SIMULATION
Mr. Alexander Ryan, The University of Sydney, Australia

13:45-13:55 IAC-19/C4/IP.10
THE P-5 ENGINE: A COSTA RICAN, COST-EFFECTIVE, LOW POWER LIQUID ROCKET ENGINE
Mr. Roy Ramirez, Purdue University, United States

13:55-14:05 IAC-19/C4/IP.11
EXPERIMENTAL INVESTIGATION ON DRAG REDUCTION BY PLASMA COUNTERFLOW JETS IN MACH 7 SHOCK TUNNEL
Mr. Jaecheong Lee, Chungnam National University, Korea, Republic of

14:05-14:15 IAC-19/C4/IP.12
PLASMA ASSISTED NITROUS OXIDE DIRECT THERMAL \\ DECOMPOSITION AND COMBUSTION FOR HYBRID ROCKET
Mr. Myoungjin Kim, Chosun University, Korea, Republic of

14:15-14:25 IAC-19/C4/IP.14
DEVELOPMENT AND VALIDATION OF HIGH-PERFORMANCE HYPERGOLIC HYBRID ROCKET FUEL IGNITOR WITH HYDROGEN PEROXIDE
Mr. Junyeong Jeong, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

14:25-14:35 IAC-19/C4/IP.15
DEVELOPMENT AND TESTING OF A HIGH-PERFORMANCE 3D PRINTED INCONEL RESISTOJET
Mr. Giulio Coral, University of Tokyo, Japan

14:35-14:45 IAC-19/C4/IP.16
PLUME SIMULATION OF HAN THRUSTER FOR GREEN PROPELLANT APPLICATION
Mr. Jung Won Kuk, Sejong University, Korea, Republic of

SCREEN #23

13:15-13:25 IAC-19/C4/IP.17
INNOVATIVE VRD SOLUTION FOR DEEP SPACE MISSIONS
Mr. Volodymyr Astapenko, SPACE HUB Incubator, Ukraine

13:25-13:35 IAC-19/C4/IP.19
THE CRYOGENIC PROPULSION TECHNOLOGY FOR FUTURE DEEP SPACE EXPLORATION
Ms. Han JI, Beijing Union University, China

13:35-13:45 IAC-19/C4/IP.21
THE IPG6-B AS A RESEARCH FACILITY TO SUPPORT FUTURE DEVELOPMENT OF ELECTRIC PROPULSION
Mr. Jens Schmidt, Baylor University, Germany

13:45-13:55 IAC-19/C4/IP.22
OVERVIEW OF RESEARCH ON NUCLEAR THERMAL ROCKET NOZZLES AT OSU
Mr. Nick Salamon, The Ohio State University College of Engineering, United States

13:55-14:05 IAC-19/C4/IP.29
ON THE EFFECTS OF THERMOACOUSTICS ON SOOT FORMATION AND FLAME INSTABILITY
Mr. Rahul Ravi Ravichandran, SRM University, kattankulathur,chennai,INDIA, India

14:05-14:15 IAC-19/C4/IP.30
STUDY OF DUAL-CATALYTIC BED SCALE-UP PARAMETERS FOR HIGH TEST HYDROGEN PEROXIDE THRUSTERS
Mr. Sangwoo Jung, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

14:15-14:25 IAC-19/C4/IP.31
COMBUSTION AND PROPULSIVE CHARACTERISTICS OF POTENTIAL HYBRID ROCKET PROPELLANT
Mr. Aditya Virkar, SRM University, kattankulathur,chennai,INDIA, India

14:25-14:35 IAC-19/C4/IP.34
THE EFFECT OF FUEL LENGTH ON THE REGRESSION RATE IN SWIRLING-OXIDIZER-FLOW-TYPE HYBRID ROCKET USING A LIQUEFYING FUEL
Mr. Yo Kawabata, Chiba Institute of Technology, Japan

14:35-14:45 IAC-19/C4/IP.35
ELECTRIC PROPULSION'S RATIONAL APPLICATION RANGE ON THE SMALL SPACECRAFTS
Mr. Alexey Sidorov, Dnipropetrovsk National University named after Oles Gonchar, Ukraine

SCREEN #24

13:15-13:25 IAC-19/D1/IP.2
MODULAR ARCHITECTURE DESIGN AND EVALUATION OF LARGE SPACECRAFT
Mr. Dong Yang, Northwestern Polytechnical University;National Key Laboratory of Aerospace Flight Dynamics, China

13:25-13:35 IAC-19/D1/IP.3
THE OPEN SOURCE SATELLITE: SPINNING IN "BEST-OF-BREED" SPACE AND TERRESTRIAL INNOVATIONS TO SPIN-OUT AFFORDABLE NEW MISSION IDEAS
Mrs. Anita Bernie, KISPE Space Systems Limited, United Kingdom

13:35-13:45 IAC-19/D1/IP.5
EVALUATION OF THE LEARNING PROCESS OF A DATA-DRIVEN SYSTEMS ENGINEERING METHODOLOGY IN A WORKSHOP ENVIRONMENT
Mr. Paolo Guardabasso, ISAE-Supaero University of Toulouse, France

13:55-14:05 IAC-19/D3/IP.3
INCORPORATING SUSTAINABILITY INTO PLANNED LUNAR MISSIONS: BUILDING BLOCKS FOR LUNAR SETTLEMENT THROUGH LUNAR SUSTAINABILITY GOALS
Mr. Scott Ritter, International Space University, France

14:05-14:15 IAC-19/D3/IP.5
MODULAR FIELD ROBOTS FOR EXTRATERRESTRIAL EXPLORATION
Mr. Troy Cordie, CSIRO, Australia

SCREEN #25

13:15-13:25 IAC-19/D2/IP.1
DEVELOPMENT OF KSLV-II AND FLIGHT TEST OF ITS ONE STAGED TEST VEHICLE EMPLOYING NEWLY DEVELOPED MAIN ENGINE(KRE-75)
Dr. Seung-Bo Jin, Korea Aerospace Research Institute (KARI), Korea, Republic of

13:25-13:35 IAC-19/D2/IP.2
THE DESIGN AND DEVELOPMENT OF A MEDIUM-SCALE LIQUID COMMERCIAL LAUNCH VEHICLE NAMED ZQ-2 BASED ON LIQUID OXYGEN AND LIQUID METHANE PROPULSION SYSTEM
Ms. Lei Zhang, LandSpace Technology Ltd, China

13:35-13:45 IAC-19/D2/IP.3
MULTIDISCIPLINARY DESIGN ANALYSIS OF A SEMI-REUSABLE TWO-STAGE-TO-ORBIT SMALL PAYLOAD LAUNCH SYSTEM
Dr. Christie Maddock, University of Strathclyde, United Kingdom

13:45-13:55 IAC-19/D2/IP.4
LESSONS AND LEARNS OF LAUNCHING TEST LAUNCH VEHICLE OF KSLV-II CONCERNING LAUNCH COMPLEX DEVELOPMENT
Dr. Sunil Kang, Korea Aerospace Research Institute (KARI), Korea, Republic of

13:55-14:05 IAC-19/D2/IP.6
LIGHTNING PROTECTION SYSTEM: CURRENT STRATEGY AND EVOLUTIONS
Mr. Gérard ORDONNEAU, ONERA - The French Aerospace Lab, France

SCREEN #26

13:15-13:25 IAC-19/D2/IP.8
COMPARATIVE ANALYSIS OF UPPER STAGE AND BUILT-IN PROPULSION SYSTEM FOR GEO SATELLITE LAUNCHES
Mr. Roman Mykhalchyshyn, Yuzhnoye State Design Office, Ukraine

13:25-13:35 IAC-19/D2/IP.9
FEASIBILITY OF AN AUTOMATED STREAMLINED BODY FOR LAUNCH VEHICLES AND LEO TRANSPORTATION
Mr. SAYANTAN SAHA, SRM University Chennai, India

13:35-13:45 IAC-19/D2/IP.12
OVERVIEW OF AVIONICS ARCHITECTURE ON STAND-ALONE TEST LAUNCH VEHICLE (TLV), SECOND STAGE OF KOREA SPACE LAUNCH VEHICLE-II (KSLV-II)
Dr. Seung-Hyun Hwang, Korea Aerospace Research Institute (KARI), Korea, Republic of

13:45-13:55 IAC-19/D2/IP.13
A STUDY ON MISSION DESIGN FRAMEWORK OF REUSABLE VEHICLES FOR POTENTIAL HUMAN SPACEFLIGHT IN LEO
Mr. Monish Mathur, University of Petroleum and Energy Studies, India

13:55-14:05 IAC-19/D2/IP.14
MISSION CONTROL AS A SERVICE - A TURN KEY SOLUTION IN SPACE COMMUNICATIONS
Mr. Lauri Kimmel, SpaceIT, Estonia

14:05-14:15 IAC-19/D2/IP.15
SAAOPL SYSTEM: ITS DESIGN AND TECHNICAL FEASIBILITY STUDY
Dr. Li Wan, , United States

SCREEN #27

13:15-13:25 IAC-19/D4/IP.3
KOBOT ERA: ROBOT MODULARITY FOR OPTIMIZED MANNED SUPERVISION.
Mr. Philippe Martin, Telespazio Deutschland GmbH, Germany

13:25-13:35 IAC-19/D4/IP.5
NIAC: THE NASA INNOVATIVE ADVANCED CONCEPTS PROGRAM
Dr. Michael LaPointe, National Aeronautics and Space Administration (NASA), United States

13:35-13:45 IAC-19/D4/IP.6
NEW SUPPLY CHAIN METHODS USING BLOCKCHAIN, 'NEXT GENERATION OF TRACEABILITY' FOR AEROSPACE INDUSTRY.
Mr. Pavlo Tanasyuk, University of Cambridge, United Kingdom

13:45-13:55 IAC-19/D4/IP.7
PHOBOS AND MARS ORBIT AS A BASE FOR MAIN BELT ASTEROID MINING
Dr. Martin Elvis, Harvard-Smithsonian Center for Astrophysics (CfA), United States

13:55-14:05 IAC-19/D4/IP.8
OPTICAL-RF DUAL RELAY COMMUNICATION SYSTEM FOR 1000-AU INTERSTELLAR MISSION
Mrs. Katelyn Kufahl, The John Hopkins University Applied Physics Laboratory, United States

14:05-14:15 IAC-19/D4/IP.9
PROJECT HELIOS PHASE I: THE EXTRACTION OF HELIUM-3 IN LUNAR REGOLITH FOR ANEUTRONIC NUCLEAR FUSION
Mr. Benjamin Wong, University of British Columbia, Canada

14:15-14:25 IAC-19/D4/IP.10
CAPACITY BUILDING IN SPACE SCIENCE AND TECHNOLOGY: THE SPACE GENERATION ADVISORY COUNCIL PARTICIPATION TO THE AFRICAN LEADERSHIP CONFERENCE YOUTH FORUM 2018
Mr. Abraham Akinwale, Space Generation Advisory Council (SGAC), Nigeria

14:25-14:35 IAC-19/D4/IP.11
PROSPECT COMMERCIAL ROUTES IN THE EARTH-MOON SYSTEM'S SERVICE VOLUME
Mr. Gabriele Impresario, Agenzia Spaziale Italiana (ASI), Italy

14:35-14:45 IAC-19/D4/IP.13
MOON SETTLEMENT (WITH MARS-USE POTENTIAL) TECHNOLOGY
Mr. Alejandro Gualtieri, , Switzerland

SCREEN #28

13:15-13:25 IAC-19/D5/IP.1
TOXIC AIR REMOVAL USING AN INDOOR HOUSEPLANT IN THE CORE MODULE OF INFLATABLE LUNAR MARTIAN ANALOG HABITAT AT THE UNIVERSITY OF NORTH DAKOTA
Mr. Rakesh Ravi Shankar, University of North Dakota, United States

13:25-13:35 IAC-19/D5/IP.2
SECURING THE FINAL FRONTIER: A REVIEW OF SECURITY CHALLENGES AND A DISCUSSION OF SOME PROSPECTIVE SOLUTIONS AND WHAT CAN'T BE SOLVED
Dr. Jeremy Straub, North Dakota State University, United States

13:35-13:45 IAC-19/D5/IP.3
SPACE CONCORDIA CUBESAT PROJECT CASE-STUDY: ESTABLISHING LASTING PRACTICES WITH NEW MANAGEMENT APPROACHES
Ms. Mary Grace Kalnay, Concordia University, Canada

13:45-13:55 IAC-19/D5/IP.4
SELF INDUCED FIRE PROPAGATION IN AN ARRAY OF HEAT SOURCES.
Ms. Pritha Pal, SRM University, kattankulathur,chennai,INDIA, India

SCREEN #29

13:15-13:25 IAC-19/E1/IP.1
THE PROJECT MARS COMPETITION: ENGAGING THE PUBLIC IN SPACE
Dr. Jancy McPhee, The Aerospace Corporation, United States

13:25-13:35 IAC-19/E1/IP.2
PREPARING STUDENTS FOR THE INTERNATIONAL NEW SPACE ECONOMY
Mr. Nathaniel Woodford, [unlisted], United States

13:35-13:45 IAC-19/E1/IP.4
CAPACITY BUILDING FOR NEWSPACE AFRICA IN SPACE SCIENCE AND TECHNOLOGY: DEVELOPING THE YOUTHS FOR THE FUTURE OF AFRICAN SPACE
Mr. Abraham Akinwale, Space Generation Advisory Council (SGAC), Nigeria

13:45-13:55 IAC-19/E1/IP.5
TRAINING THE NEXT-GENERATION SPACE INDUSTRY WORKFORCE IN SATELLITE DESIGN AND MANUFACTURING
Ms. Staten A. Longo, Northrop Grumman Corporation, United States

13:55-14:05 IAC-19/E1/IP.7
SPACE SCIENCE AND TECHNOLOGY:THE FUTURE OF GIRLS/ WOMEN IN AFRICA
Mrs. Chidinma Iroka Joy, National Space Research and Development Agency (NASRDA), Abuja Nigeria, Nigeria

14:05-14:15 IAC-19/E1/IP.8
COMPLETE DEVELOPMENT AND TESTING OF LAB-SCALE HYBRID ROCKET MOTORS BY UNDERGRADUATE STUDENTS
Prof.Dr. Rene Gonçalves, Instituto Tecnológico de Aeronáutica (ITA), Brazil

14:15-14:25 IAC-19/E1/IP.10
SPACE TECHNOLOGY BASED PROJECTS TO IMPROVE STEM/ STEAM EDUCATION FROM AN EMERGING ECONOMY PERSPECTIVE, THE CASE OF PARAGUAY.
Prof. Alejandro J. Roman Molinas, Paraguayan Space Agency, Paraguay

14:25-14:35 IAC-19/E1/IP.11
VIRTUAL REALITY TECHNOLOGY AS AN EFFICIENT INSTRUMENT OF SPACE EDUCATION AND OUTREACH.
Mr. Denis Nechvola, State Enterprise M.K. Yangel "Yuzhnoye" Design Office, Ukraine

14:35-14:45 IAC-19/E1/IP.12
FROM SPACEFLIGHT HARDWARE TO UNIVERSITY STUDENT DESIGNS: HOW IMPLEMENTATION OF NASA METHODOLOGIES AND PROCESSES ENSURE PROJECT SUCCESS IRRESPECTIVE OF SCALE
Ms. Ruth May, University of Alabama in Huntsville, United States

SCREEN #30

13:15-13:25 IAC-19/E1/IP.14
BUILDING AN EDUCATIONAL CUBESAT TRACKING NETWORK IN AUSTRALIA
Mr. Mike Thompson, , Australia

13:25-13:35 IAC-19/E1/IP.17
YOUNG PROFESSIONALS IN THE UAE SPACE SECTOR
Ms. Maitha Al Romaithi, UAE Space Agency, United Arab Emirates

13:35-13:45 IAC-19/E1/IP.18
THE LATIN-AMERICAN SPACE WORKFORCE DEVELOPMENT AND THE CONTRIBUTION OF THE ANDEAN ROAD COUNTRIES FOR SCIENCE AND TECHNOLOGY TO THE REGION.
Prof.Dr. Marco Cabero, Beihang University, China

13:45-13:55 IAC-19/E1/IP.21
PRACTICAL INTRODUCTION TO AEROSPACE ENGINEERING THROUGH AMATEUR ROCKETRY
Mr. Charles-Frédérick Gauthier, Université de Sherbrooke, Canada

13:55-14:05 IAC-19/E1/IP.23
CANADA'S FIRST AND ONLY UNDERGRADUATE PARABOLIC FLIGHT CAMPAIGN
Ms. Roxanne Fournier, University of Toronto, Canada

14:05-14:15 IAC-19/E1/IP.24
THE EDUCATIONAL PLATFORM SOURCE - A CUBESAT MISSION ON DEMISE INVESTIGATION USING IN-SITU HEAT FLUX MEASUREMENTS
Mr. Daniel Galla, IRS, University of Stuttgart, Germany

14:15-14:25 IAC-19/E1/IP.25
TSAT 5: MAKING CUBESATS ACCESSIBLE TO THE PUBLIC VIA A WEB AND AMATEUR RADIO BASED SATELLITE USER INTERFACE.
Mr. Sanjay Abraham, University of Manitoba, Canada

14:25-14:35 IAC-19/E1/IP.26
A HISTORY OF UMSATS: NEARING 10 YEARS OF STUDENT SATELLITE DESIGN SUCCESS
Mr. Matthew Driedger, University of Manitoba, Canada

14:35-14:45 IAC-19/E1/IP.27
PRE - FEASIBILITY EVALUATION FOR THE IMPLEMENTATION OF A SPACE STUDIES PROGRAM FOR MANAGEMENT STUDENTS IN SOUTH AMERICA
Mrs. Nicole Villanueva Justino, Pontifical Catholic University of Peru, Peru

SCREEN #31

13:15-13:25 IAC-19/E1/IP.29
EXPERIENCES FROM THE FIRST GRADUATE PROGRAM ON SPACE TECHNOLOGY IN THE UNITED ARAB EMIRATES
Prof. Prashanth Marpu, Khalifa University of Science and Technology (KUST), United Arab Emirates

13:25-13:35 IAC-19/E1/IP.32
THE OUT ASTRONAUT PROJECT: EMPLOYING THE INSPIRATIONAL POWER OF ASTRONAUTICS TO EMPOWER THE LGBTQ COMMUNITY IN SCIENCE AND SPACE.
Ms. Yvette Marie Gonzalez, Moon Village Association (MVA), United States

13:35-13:45 IAC-19/E1/IP.33
NASA'S INTERNATIONAL SPACE APPS CHALLENGE: 6 YEARS OF GLOBAL HACKATHON WEEKENDS FOR INNOVATION INCUBATION FROM THE LOCAL PERSPECTIVE OF STUTTGART, GERMANY
Mr. Andreas Hornig, University of Stuttgart, Germany

SCREEN #32

13:15-13:25 IAC-19/E3/IP.2
A PROPOSED BLUEPRINT FOR AFRICAN UNIVERSITIES TOWARDS SUPPORTING THE AFRICAN SPACE AGENCY
Mr. Mustapha Eleyawa Agbadi, Space Generation Advisory Council (SGAC), Nigeria

13:25-13:35 IAC-19/E3/IP.4
MARS/EUROPA INPPS: ALL RIGHT FOR UN NPS PRINCIPLES
Dr. Frank Jansen, DLR (German Aerospace Center), Germany

13:35-13:45 IAC-19/E3/IP.5
NATIONAL SPACE AGENDA AS A MIRROR OF SPACE POLICY
Dr. Gulnara Omarova, Fesenkov Astrophysical Institute, Kazakhstan

13:45-13:55 IAC-19/E3/IP.7
SPACE SOVEREIGNTY VS DEPENDENCY – SPACE POLICY FOR NEW SPACE POWERS
Dr. Malcolm Davis, Australian Space Policy Institute (ASPI), Australia

13:55-14:05 IAC-19/E3/IP.8
THE PROCESS OF SPACE POLICY IN THE UNITED STATES
Ms. Kathryn Robison, The University of Alabama, United States

14:05-14:15 IAC-19/E3/IP.9
LAW ENFORCEMENT 2.0: LEGAL AND ETHICAL CONSIDERATIONS FOR POLICING PRIVATE SPACE ACTORS EX TERRA
Dr. Sara Langston, Embry-Riddle Aeronautical University, United States

SCREEN #33

13:15-13:25 IAC-19/E5/IP.1
PRESERVING AND SHARING AEROSPACE HISTORY THROUGH CROSS GENERATIONAL AND INTERACTIVE COLLABORATIVE ACTIVITIES
Ms. Rachel Tillman, The Viking Mars Missions Education and Preservation Project (VMMEPP), United States

13:25-13:35 IAC-19/E5/IP.2
SCRUM AND THE ART OF INTERNATIONAL SPACE LAW
Mr. David Lopez, National Aeronautics and Space Administration (NASA), United States

13:35-13:45 IAC-19/E5/IP.3
SPACE SATELLITES FOR A HEALTHY EARTH
Ms. Wendy Vasquez, Université de Sherbrooke, Canada

13:45-13:55 IAC-19/E5/IP.4
TECHNICAL AND ECONOMIC ASSESSMENT OF ISRU AND NON-ISRU LUNAR HABITAT RADIATION SHIELD
Mr. Chris Spedding, Open University, United Kingdom

13:55-14:05 IAC-19/E5/IP.5
A CASE STUDY OF HUMAN FACTOR & ANTHROPOLOGICAL INVESTIGATIONS IN SPACE MISSION SIMULATIONS AND ANALOGS.
Mr. Benjamin Pothier, Plymouth University, France

14:05-14:15 IAC-19/E5/IP.6
SPACE SOLUTION TO WORLD'S WATER CRISIS: A CASE STUDY WITH REMOTE SENSING, SCIENCE AND TECHNOLOGY IN SYNERGY
Mr. Miracle Israel Nazarious, Luleå University of Technology, Sweden

14:15-14:25 IAC-19/E5/IP.7
AUSTRALIAN SPACE AGENCY - A BRAND STORY DRAWING ON AUSTRALIA'S PAST, PRESENT AND FUTURE.
Mr. Anthony Murfett, Australian Space Agency, Australia

14:25-14:35 IAC-19/E5/IP.9
UAE SPACE AGENCY EFFORTS ON SPREADING AWARENESS OF THE UAE SPACE SECTOR
Ms. Maitha Al Romaithi, UAE Space Agency, United Arab Emirates

14:35-14:45 IAC-19/E5/IP.10
WITHOUT SPACE
Mr. Bal Dhital, Newcastle University, Australia

SCREEN #34

13:15-13:25 IAC-19/E6/IP.1
ESA PARTNERSHIPS: A RISKY BUSINESS?
Ms. Maria-Gabriella Sarah, European Space Agency (ESA), France

13:25-13:35 IAC-19/E6/IP.4
THE PRELIMINARY CONCEPT OF COMMERCIAL LAUNCH SERVICE PROVIDER ALLIANCES
Mr. Yawei Xu, LandSpace Technology Ltd, China

13:35-13:45 IAC-19/E6/IP.5
ROLE OF INSURANCE IN MITIGATION RISK IN SPACE OPERATIONS - FOCUSING PARTICULARLY ON NEWSPACE
Ms. Helen Tung, Moon Village Association (MVA), United Arab Emirates

SCREEN #35

13:15-13:25 IAC-19/E7/IP.3
DOES SPACE START AT 80 KM? REVISITING THE KARMAN LINE
Dr. Jonathan McDowell, Harvard-Smithsonian Center for Astrophysics (CfA), United States

13:25-13:35 IAC-19/E7/IP.4
RE-DISCOVERING THE BOUNDARY PROBLEM
Mr. Kyran Grattan, International Institute of Air and Space Law, Leiden University, The Netherlands

13:35-13:45 IAC-19/E7/IP.6
SMALL SATELLITES AND REGULATION: A GENERAL OVERVIEW WITH A SPECIFIC REFERENCE TO THE ITALIAN CONTEXT.
Dr. Marina Gagliardi, Italian Space Agency (ASI), Italy

13:45-13:55 IAC-19/E7/IP.10
THE ISSUES OF KEY CONCERN REGARDING SPACE MINING: REVISIT OF THE MOON AGREEMENT FROM THE CHINESE PERSPECTIVE
Dr. Kuan Yang, Beijing Institute of Technology, Institute of Space Law, China

13:55-14:05 IAC-19/E7/IP.11
RELEVANCE OF MILITARIZED ARTIFICIAL INTELLIGENCE TO SOVEREIGNTY IN SPACE: LEGAL CHALLENGES AND CONFLICTS
Ms. Mahshid TalebianKiakalayeh, , Iran

14:05-14:15 IAC-19/E7/IP.13
CAN A NON-FUNCTIONAL FACILITY ON THE MOON BECOME RES NULLIUS AND BE OCCUPIED BY A SUBSEQUENT STATE? ANALYZING THE LIMITATION ON THE STATE JURISDICTION AND OWNERSHIP OVER FACILITIES CONSTRUCTED ON THE MOON.
Mr. Tejas Bharadwaj, University of Petroleum and Energy Studies, India

14:15-14:25 IAC-19/E7/IP.14
TRANSITIONING INTO HIGHER-AIRSPACE TRAFFIC MANAGEMENT (HATM) AND SPACE TRAFFIC MANAGEMENT (STM)
Mr. Maarten Adriaensen, , Belgium

14:25-14:35 IAC-19/E7/IP.15
WHO OWNS THIS SPACE? A SURVEY OF SPACE INDUSTRY LEADERS AND LEGAL EXPERTS ASSESSING SPACE PROPERTY RIGHTS ISSUES AND POTENTIAL RESOLUTIONS
Mr. Joshua Burks, Auburn University, United States

14:35-14:45 IAC-19/E7/IP.17
THE LEGAL HISTORY OF THE BOGOTÁ DECLARATION: CONTESTING THE MEANING OF "HUMANITY" FROM THE GLOBAL SOUTH
Mr. Haris Durrani, Columbia Law School, United States

SCREEN #36

13:15-13:25 IAC-19/E7/IP.18
OUMUAMUA: APPLYING A MULTI-MESSENGER APPROACH TO FUNDAMENTAL LEGAL AND ETHICAL ISSUES FOR DEVELOPING GOVERNING FRAMEWORKS ON SPACE MINING
Dr. Sara Langston, Embry-Riddle Aeronautical University, United States

13:25-13:35 IAC-19/E7/IP.19
PARTIAL OWNERSHIP FOR OUTER SPACE ECONOMY
Mr. Erwan Beauvois, International Master SEEDS, France

13:35-13:45 IAC-19/E7/IP.20
POTENTIAL DISPUTES ARISING FROM SPACE ACTIVITIES: OPPORTUNITIES FOR INVESTMENT ARBITRATION
Mr. Martin Svec, Charles University, Czech Republic

13:45-13:55 IAC-19/E7/IP.22
A THIRD WAY - NEW APPROACHES TO SPACE RESOURCE GOVERNANCE
Ms. Jessy Kate Schingler, Open Lunar Foundation, United States

7 Technical Sessions by Symposium

Please check the IAF App to get the latest updates on the Technical Sessions.

Nr.	Session name	Date	Time	Room
A1	**IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM**			
A1.1	Behaviour, Performance and Psychosocial Issues in Space	Mon, 21 Oct	15:00	143B
A1.2	Human Physiology in Space	Tue, 22 Oct	09:45	143B
A1.3	Medical Care for Humans in Space	Tue, 22 Oct	14:45	143B
A1.4	Medicine in Space and Extreme Environments	Wed, 23 Oct	14:45	143B
A1.5	Radiation Fields, Effects and Risks in Human Space Missions	Thu, 24 Oct	09:45	143B
A1.6	Astrobiology and Exploration	Thu, 24 Oct	14:45	143B
A1.7	Life Support, habitats and EVA Systems	Fri, 25 Oct	09:45	143B
A1.8	Biology in Space	Fri, 25 Oct	13:30	143B
A2	**IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM**			
A2.1	Gravity and Fundamental Physics	Mon, 21 Oct	15:00	143C
A2.2	Fluid and Materials Sciences	Wed, 23 Oct	09:45	143C
A2.3	Microgravity Experiments from Sub-Orbital to Orbital Platforms	Wed, 23 Oct	14:45	143C
A2.4	Science Results from Ground Based Research	Thu, 24 Oct	09:45	143C
A2.5	Facilities and Operations of Microgravity Experiments	Thu, 24 Oct	14:45	143C
A2.6	Microgravity Sciences on board ISS and beyond	Fri, 25 Oct	09:45	143C
A2.7	Life and Physical Sciences under reduced Gravity	Fri, 25 Oct	13:30	143C
A3	**IAF SPACE EXPLORATION SYMPOSIUM**			
A3.1	Space Exploration Overview	Mon, 21 Oct	15:00	146B
A3.2A	Moon Exploration – Part 1	Tue, 22 Oct	09:45	146B
A3.2B	Moon Exploration – Part 2	Tue, 22 Oct	14:45	146B
A3.2C	Moon Exploration – Part 3	Fri, 25 Oct	09:45	146B
A3.3A	Mars Exploration – missions current and future	Wed, 23 Oct	09:45	146B
A3.3B	Mars Exploration – Science, Instruments and Technologies	Wed, 23 Oct	14:45	146B
A3.4A	Small Bodies Missions and Technologies (Part 1)	Thu, 24 Oct	09:45	146B
A3.4B	Small Bodies Missions and Technologies (Part 2)	Fri, 25 Oct	13:30	146B
A3.5	Solar System Exploration including Ocean Worlds	Thu, 24 Oct	14:45	146B
A4	**48th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps**			
A4.1	SETI 1: SETI Science and Technology	Tue, 22 Oct	09:45	143C
A4.2	SETI 2: SETI and Society	Tue, 22 Oct	14:45	143C
A4.IP	Interactive Presentations - 48th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps	Thu, 24 Oct	13:15	IP Area
A5	**22nd IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM**			
A5.1	Human Exploration of the Moon and Cislunar Space	Wed, 23 Oct	09:45	145B
A5.2	Human Exploration of Mars	Wed, 23 Oct	14:45	145B

Nr.	Session name	Date	Time	Room
A5.3-B3.6	Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia	Thu, 24 Oct	09:45	151A
A5.4-D2.8	Space Transportation Solutions for Deep Space Missions	Fri, 25 Oct	09:45	146C
A6	**17th IAA SYMPOSIUM ON SPACE DEBRIS**			
A6.1	Space Debris Detection, Tracking and Characterization	Mon, 21 Oct	15:00	150B
A6.10-B4.10	Joint Small Satellite/Space Debris Session to Promote the Long-Term Sustainability of Space	Fri, 25 Oct	09:45	151A
A6.2	Modelling and Risk Analysis	Tue, 22 Oct	09:45	150B
A6.3	Impact-Induced Mission Effects and Risk Assessments	Tue, 22 Oct	14:45	150B
A6.4	Mitigation - Tools, Techniques and Challenges	Wed, 23 Oct	09:45	150B
A6.5	Post Mission Disposal and Space Debris Removal (1)	Wed, 23 Oct	14:45	150B
A6.6	Post Mission Disposal and Space Debris Removal (2)	Thu, 24 Oct	09:45	150B
A6.7	Operations in Space Debris Environment, Situational Awareness	Thu, 24 Oct	14:45	150B
A6.8	Policy, Legal, Institutional and Economic Aspects of Space Debris Detection, Mitigation and Removal (Joint Session with IAF Space Security Committee)	Fri, 25 Oct	09:45	150B
A6.9	Orbit Determination and Propagation	Fri, 25 Oct	13:30	150B
A7	**IAF SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS**			
A7.1	Space Agency Strategies and Plans	Mon, 21 Oct	15:00	144A
A7.2	Science Goals and Drivers for Future Exoplanet, Space Astronomy, Physics, and Outer Solar System Science Missions	Tue, 22 Oct	14:45	144A
A7.3	Technology Needs for Future Missions, Systems, and Instruments	Wed, 23 Oct	14:45	144A
B1	**IAF EARTH OBSERVATION SYMPOSIUM**			
B1.1	International Cooperation in Earth Observation Missions	Mon, 21 Oct	15:00	147A
B1.2	Future Earth Observation Systems	Wed, 23 Oct	09:45	147A
B1.3	Earth Observation Sensors and Technology	Wed, 23 Oct	14:45	147A
B1.4	Earth Observation Data Management Systems	Thu, 24 Oct	09:45	147A
B1.5	Earth Observation Applications, Societal Challenges and Economic Benefits	Fri, 25 Oct	13:30	147A
B1.6	50 years of Earth observation: The contribution to sustainable development goals and plans for the future	Fri, 25 Oct	09:45	144C
B2	**IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM**			
B2.1	Advanced Technologies for Space Communications	Mon, 21 Oct	15:00	140A
B2.2	Advanced Space Communications and Navigation Systems	Tue, 22 Oct	14:45	140A
B2.3	Fixed and Broadcast Communications	Wed, 23 Oct	09:45	140A
B2.4	Mobile Satellite Communications and Navigation Technology	Wed, 23 Oct	14:45	140A
B2.5	Advanced Satellite Services	Thu, 24 Oct	09:45	140A
B2.6	Space-Based Navigation Systems and Services	Thu, 24 Oct	14:45	140A
B2.7	Near-Earth and Interplanetary Communications	Fri, 25 Oct	09:45	140A
B2.8-GTS.3	Space Communications and Navigation Global Technical Session	Tue, 22 Oct	09:45	147B
B3	**IAF HUMAN SPACEFLIGHT SYMPOSIUM**			
B3.1	Governmental Human Spaceflight Programs (Overview)	Mon, 21 Oct	15:00	151A
B3.2	Commercial Human Spaceflight Programs	Tue, 22 Oct	09:45	151A
B3.3	Utilization & Exploitation of Human Spaceflight Systems	Tue, 22 Oct	14:45	151A

Nr.	Session name	Date	Time	Room
B3.4-B6.4	Flight & Ground Operations of HSF Systems - Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia	Wed, 23 Oct	09:45	151A
B3.5	Astronaut Training, Accommodation, and Operations in Space	Wed, 23 Oct	14:45	151A
B3.6-A5.3	Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia	Thu, 24 Oct	09:45	151A
B3.7	Advanced Systems, Technologies, and Innovations for Human Spaceflight	Thu, 24 Oct	14:45	151A
B3.8-GTS.2	Human Spaceflight Global Technical Session	Fri, 25 Oct	09:45	147B
B4	**26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS**			
B4.1	20th Workshop on Small Satellite Programmes at the Service of Developing Countries	Tue, 22 Oct	09:45	151B
B4.10-A6.10	Joint Small Satellite/Space Debris Session to promote the long-term sustainability of space	Fri, 25 Oct	09:45	151A
B4.2	Small Space Science Missions	Mon, 21 Oct	15:00	151B
B4.3	Small Satellite Operations	Tue, 22 Oct	14:45	151B
B4.4	Small Earth Observation Missions	Wed, 23 Oct	09:45	151B
B4.5	Access to Space for Small Satellite Missions	Wed, 23 Oct	14:45	151B
B4.5A-C4.8	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	Thu, 24 Oct	14:45	143A
B4.6A	Generic Technologies for Small/Micro Platforms	Thu, 24 Oct	09:45	151B
B4.6B	Generic Technologies for Nano/Pico Platforms	Fri, 25 Oct	13:30	151B
B4.7	Constellations and Distributed Systems	Thu, 24 Oct	14:45	151B
B4.8	Small Spacecraft for Deep-Space Exploration	Fri, 25 Oct	09:45	151B
B4.9-GTS.5	Small Satellite Missions Global Technical Session	Thu, 24 Oct	09:45	147B
B5	**IAF SYMPOSIUM ON INTEGRATED APPLICATIONS**			
B5.1	Tools and Technology in Support of Integrated Applications	Mon, 21 Oct	15:00	152A
B5.2	Integrated Applications End-to-End Solutions	Thu, 24 Oct	09:45	140B
B5.3	Satellite Commercial Applications	Fri, 25 Oct	13:30	140B
B6	**IAF SPACE OPERATIONS SYMPOSIUM**			
B6.1	Ground Operations - Systems and Solutions	Fri, 25 Oct	09:45	140B
B6.2	New Space Operations Concepts and Advanced Systems	Mon, 21 Oct	15:00	140B
B6.3	Mission Operations, Validation, Simulation and Training	Thu, 24 Oct	14:45	140B
B6.4-B3.4	Flight & Ground Operations of HSF Systems - A Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia	Wed, 23 Oct	09:45	151A
C1	**IAF ASTRODYNAMICS SYMPOSIUM**			
C1.1	Mission Design, Operations & Optimization (1)	Mon, 21 Oct	15:00	150A
C1.2	Mission Design, Operations & Optimization (2)	Tue, 22 Oct	09:45	150A
C1.3	Orbital Dynamics (1)	Tue, 22 Oct	14:45	150A
C1.4	Orbital Dynamics (2)	Wed, 23 Oct	09:45	150A
C1.5	Attitude Dynamics (1)	Wed, 23 Oct	14:45	150A
C1.6	Attitude Dynamics (2)	Thu, 24 Oct	09:45	150A
C1.7	Guidance, Navigation & Control (1)	Thu, 24 Oct	14:45	150A
C1.8	Guidance, Navigation & Control (2)	Fri, 25 Oct	09:45	150A
C1.9	Guidance, Navigation & Control (3)	Fri, 25 Oct	13:30	150A

Nr.	Session name	Date	Time	Room
C2	**IAF MATERIALS AND STRUCTURES SYMPOSIUM**			
C2.1	Space Structures I - Development and Verification (Space Vehicles and Components)	Mon, 21 Oct	15:00	152B
C2.2	Space Structures II - Development and Verification (Deployable and Dimensionally Stable Structures)	Tue, 22 Oct	09:45	152B
C2.3	Space Structures - Dynamics and Microdynamics	Tue, 22 Oct	14:45	152B
C2.4	Advanced Materials and Structures for High Temperature Applications	Wed, 23 Oct	09:45	152B
C2.5	Advancements in Materials Applications and Rapid Prototyping	Wed, 23 Oct	14:45	152B
C2.6	Space Environmental Effects and Spacecraft Protection	Thu, 24 Oct	09:45	152B
C2.7	Space Vehicles – Mechanical/Robotic/Thermal/Fluidic Systems	Thu, 24 Oct	14:45	152B
C2.8	Specialised Technologies, Including Nanotechnology	Fri, 25 Oct	09:45	152B
C2.9	Smart Materials and Adaptive Structures	Fri, 25 Oct	13:30	152B
C3	**IAF SPACE POWER SYMPOSIUM**			
C3.1	Solar Power Satellite	Tue, 22 Oct	09:45	147A
C3.2	Wireless Power Transmission Technologies and Application	Tue, 22 Oct	14:45	147A
C3.3	Advanced Space Power Technologies	Thu, 24 Oct	14:45	147A
C3.4	Space Power System for Ambitious Missions	Fri, 25 Oct	09:45	147A
C3.5-C4.7	Joint Session on Advanced and Nuclear Power and Propulsion Systems	Thu, 24 Oct	09:45	143A
C4	**IAF SPACE PROPULSION SYMPOSIUM**			
C4.1	Propulsion System (1)	Mon, 21 Oct	15:00	143A
C4.10	Propulsion Technology (3)	Fri, 25 Oct	13:30	143A
C4.2	Propulsion System (2)	Wed, 23 Oct	09:45	143A
C4.3	Propulsion Technology (1)	Tue, 22 Oct	09:45	143A
C4.4	Electric Propulsion	Wed, 23 Oct	09:45	143B
C4.5	Propulsion Technology (2)	Tue, 22 Oct	14:45	143A
C4.6	New Missions Enabled by New Propulsion Technology and Systems	Wed, 23 Oct	14:45	143A
C4.7-C3.5	Joint Session on Advanced and Nuclear Power and Propulsion Systems	Thu, 24 Oct	09:45	143A
C4.8-B4.5A	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	Thu, 24 Oct	14:45	143A
C4.9	Hypersonic Air-breathing and Combined Cycle Propulsion	Fri, 25 Oct	09:45	143A
D1	**IAF SPACE SYSTEMS SYMPOSIUM**			
D1.1	Innovative and Visionary Space Systems	Mon, 21 Oct	15:00	145B
D1.2	Space Systems Architectures	Tue, 22 Oct	09:45	145B
D1.3	Technologies to Enable Space Systems	Tue, 22 Oct	14:45	145B
D1.4A	Space Systems Engineering - Methods, Processes and Tools (1)	Thu, 24 Oct	09:45	145B
D1.4B	Space Systems Engineering - Methods, Processes and Tools (2)	Thu, 24 Oct	14:45	145B
D1.5	Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards.	Fri, 25 Oct	09:45	145B
D1.6	Cooperative and Robotic Space Systems	Fri, 25 Oct	13:30	145B
D2	**IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM**			
D2.1	Launch Vehicles in Service or in Development	Mon, 21 Oct	15:00	146C
D2.2	Launch Services, Missions, Operations, and Facilities	Tue, 22 Oct	09:45	146C
D2.3	Upper Stages, Space Transfer, Entry and Landing Systems	Tue, 22 Oct	14:45	146C

Nr.	Session name	Date	Time	Room
D2.4	Future Space Transportation Systems	Wed, 23 Oct	09:45	146C
D2.5	Technologies for Future Space Transportation Systems	Wed, 23 Oct	14:45	146C
D2.6	Future Space Transportation Systems Verification and In-Flight Experimentation	Thu, 24 Oct	09:45	146C
D2.7	Small Launchers: Concepts and Operations	Thu, 24 Oct	14:45	146C
D2.8-A5.4	Space Transportation Solutions for Deep Space Missions	Fri, 25 Oct	09:45	146C
D2.9-D6.2	The Apollo program and the rockets that took humanity to the moon	Fri, 25 Oct	13:30	146C
D3	**17th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT**			
D3.1	Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development	Wed, 23 Oct	09:45	144B
D3.2A	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Systems	Wed, 23 Oct	14:45	144B
D3.2B	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies	Fri, 25 Oct	09:45	144B
D3.4	Space Technology and System Management Practices and Tools	Fri, 25 Oct	13:30	144B
D4	**17th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE**			
D4.1	Innovative Concepts and Technologies	Mon, 21 Oct	15:00	144B
D4.2	Contribution of Space Activities to Solving Global Societal Issues	Tue, 22 Oct	09:45	144B
D4.3	Space Elevator Critical Technology Verification and Validation Testing	Tue, 22 Oct	14:45	144B
D4.4	Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond	Thu, 24 Oct	09:45	144B
D4.5	Space Resources: Technologies, Systems, Missions and Policies	Thu, 24 Oct	14:45	144B
D5	**52nd IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES**			
D5.1	Quality and safety, a challenge for traditional and new space	Tue, 22 Oct	09:45	145A
D5.2	Knowledge management for space activities in the digital era	Wed, 23 Oct	09:45	145A
D5.3	Space Environment and effects on space missions	Thu, 24 Oct	09:45	145A
D5.4	Cyber-security threats to space missions and countermeasures to address them	Fri, 25 Oct	09:45	145A
D6	**IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES**			
D6.1	Commercial Spaceflight Safety and Emerging Issues	Tue, 22 Oct	09:45	140A
D6.2-D2.9	The Apollo program and the rockets that took humanity to the moon	Fri, 25 Oct	13:30	146C
D6.3	Enabling safe commercial spaceflight: vehicles and spaceports	Fri, 25 Oct	13:30	140A
E1	**IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM**			
E1.1	Ignition - Primary Space Education	Mon, 21 Oct	15:00	144C
E1.2	Lift Off - Secondary Space Education	Tue, 22 Oct	09:45	144C
E1.3	On Track - Undergraduate Space Education	Tue, 22 Oct	14:45	144C
E1.4	In Orbit - Postgraduate Space Education	Wed, 23 Oct	09:45	144C
E1.5	Enabling the Future - Developing the Space Workforce	Wed, 23 Oct	14:45	144C
E1.6	Calling Planet Earth - Space Outreach to the General Public	Thu, 24 Oct	09:45	144C
E1.7	New Worlds - Non-Traditional Space Education and Outreach	Thu, 24 Oct	14:45	144C
E1.8	Hands-on Space Education and Outreach	Fri, 25 Oct	09:45	ISZ
E1.9	Space Culture – Public Engagement in Space through Culture	Fri, 25 Oct	13:30	144C

Nr.	Session name	Date	Time	Room
E2	**47th STUDENT CONFERENCE**			
E2.1	Student Conference - Part 1	Tue, 22 Oct	09:45	140B
E2.2	Student Conference - Part 2	Tue, 22 Oct	14:45	140B
E2.3-GTS.4	Student Team Competition	Wed, 23 Oct	09:45	147B
E2.4	Educational Pico and Nano Satellites	Wed, 23 Oct	14:45	140B
E3	**32nd IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS**			
E3.1	International cooperation in using space for sustainable development: Towards a "Space2030" agenda	Tue, 22 Oct	09:45	144A
E3.2	50 years after Apollo 11: The future of space exploration and innovation	Wed, 23 Oct	09:45	144A
E3.3	Space Economics from Apollo to Tomorrow	Thu, 24 Oct	09:45	144A
E3.4	Assuring a Safe, Secure and Sustainable Environment for Space Activities	Thu, 24 Oct	14:45	144A
E3.5-E7.6	34th IAA / IISL Scientific-Legal Roundtable: Mega Constellations and Microsatellites: challenges, including registration and liability	Thu, 24 Oct	09:45	153
E3.6	Economics of Procurement in Space Contracting	Fri, 25 Oct	13:30	144A
E4	**53rd IAA HISTORY OF ASTRONAUTICS SYMPOSIUM**			
E4.1	Memoirs, Organizational, Scientific and Technical Histories	Mon, 21 Oct	15:00	147B
E4.2	History of US Contribution to Astronautics Post WWII	Wed, 23 Oct	14:45	147B
E4.3	"Can you believe they put a man on the moon?" The Apollo Program.	Thu, 24 Oct	14:45	147B
E5	**30th IAA SYMPOSIUM ON SPACE AND SOCIETY**			
E5.1A	Space Architecture: Habitats, Habitability, and Bases	Mon, 21 Oct	15:00	145A
E5.1B	Space Architecture: Habitats, Habitability, and Bases	Fri, 25 Oct	13:30	145A
E5.2	Is Space R&D Truly Fostering A Better World For Our Future?	Tue, 22 Oct	14:45	145A
E5.3	Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach	Wed, 23 Oct	14:45	145A
E5.4	Space Assets and Disaster Management	Thu, 24 Oct	14:45	145A
E5.5	Sharing space achievements and heritage: space museums and societies	Fri, 25 Oct	15:00	145A
E6	**IAF BUSINESS INNOVATION SYMPOSIUM**			
E6.1	Entrepreneurship and Innovation: The Practitioners' Perspectives	Tue, 22 Oct	14:45	147B
E6.2	Finance and Investment: The Practitioners' Perspectives	Wed, 23 Oct	09:45	140B
E6.3	Innovation: The Academics' Perspectives	Thu, 24 Oct	09:45	152A
E6.4	Strategic Risk Management for Successful Space & Defence Programmes	Fri, 25 Oct	09:45	144A
E6.5-GTS.1	Entrepreneurship Around the World	Fri, 25 Oct	13:30	147B
E7	**IISL COLLOQUIUM ON THE LAW OF OUTER SPACE**			
E7.1	Dr. Jasentuliyana Keynote lecture by a leading space law expert and IISL Young Scholars session	Tue, 22 Oct	09:45	152A
E7.2	Dispute Settlement in Space Law: Are We Ready for the Commercial Challenge?	Tue, 22 Oct	14:45	152A
E7.3	National Space Legislation – Harmonisation and Enforcement	Wed, 23 Oct	09:45	152A
E7.4	Space Traffic Management: From Space Situational Awareness and Space Surveillance and Tracking to developing Rules of the Road	Wed, 23 Oct	14:45	152A
E7.5	Space Mining: National Authority? International Authority? Both?	Fri, 25 Oct	09:45	152A

Nr.	Session name	Date	Time	Room
E7.6-E3.5	34th IAA / IISL Scientific-Legal Roundtable: Mega Constellations and Microsatellites: challenges, including registration and liability	Thu, 24 Oct	09:45	153
E7.7	Remediation of Space Debris: A Fundamental Legal Challenge?	Fri, 25 Oct	13:30	152A
GTS	**GLOBAL TECHNICAL SYMPOSIUM**			
GTS.1-E6.5	Entrepreneurship Around the World	Fri, 25 Oct	13:30	147B
GTS.2-B3.8	Human Spaceflight Global Technical Session	Fri, 25 Oct	09:45	147B
GTS.3-B2.8	Space Communications and Navigation Global Technical Session	Tue, 22 Oct	09:45	147B
GTS.4-E2.3	Student Team Competition	Wed, 23 Oct	09:45	147B
GTS.5-B4.9	Small Satellite Missions Global Technical Session	Thu, 24 Oct	09:45	147B

8 Technical Papers by Symposium

Technical Papers as of October 2019.
Please check the IAF App to get the latest updates on the Technical Papers.

A1. IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM

Coordinator(s): Peter Graef, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Oleg Orlov, SSC RF-Institute of Biomedical Problems RAS, Russian Federation;

A1.1. Behaviour, Performance and Psychosocial Issues in Space

October 21 2019, 15:00 — 143B

Co-Chair(s): Nick Kanas, University of California, San Francisco (UCSF), United States; Peter Suedfeld, University of British Columbia, Canada;
Rapporteur(s): Gro M. Sandal, University of Bergen, Norway;

IAC-19.A1.1.1
60 DAYS OF BED REST IMPAIR HIPPOCAMPAL PLASTICITY AND SPATIAL COGNITION
Alexander Christoph Stahn, University of Pennsylvania, United States

IAC-19.A1.1.2
CHANGES IN SLEEP-WAKE RHYTHMS AND CREW COHESION DURING TWO 1-YEAR ANTARCTIC WINTER-OVER MISSIONS
Mathias Basner, University of Pennsylvania, United States

IAC-19.A1.1.3
ASTRONAUTS' VIEWS OF WORK-FAMILY INTERACTIONS: SUPPORTIVE, CONFLICTING ROLES
Phyllis Johnson, University of British Columbia, Canada

IAC-19.A1.1.4
PERSONAL VALUES AND CREW DYNAMICS DURING LONG DURATION SPACE MISSIONS: COMPARING RESULTS FROM THE ISS AND SPACE ANALOG SETTINGS
Gro M. Sandal, University of Bergen, Norway

IAC-19.A1.1.5
A SYSTEMATIC REVIEW OF PERSONAL VALUES RESEARCH IN ISOLATED, CONFINED AND EXTREME ENVIRONMENTS
Nathan Smith, The University of Manchester, United Kingdom

IAC-19.A1.1.6
DECIDING ON MARS: THE EFFECTS OF ISOLATION ON AUTONOMOUS TEAM DECISION-MAKING
Leslie DeChurch, Northwestern University, United States

IAC-19.A1.1.7
TEAMS IN EXTREME ENVIRONMENTS: EXPLORING COPING AND STRESS (TE3AMS) – STUDY MOTIVATION AND INITIAL RESULTS
Jelena Brcic, University of British Columbia, Canada

IAC-19.A1.1.8
BEHAVIORAL MOTIVATION OF PROSPECTIVE MARS CREWMEMBERS
JASLEEN KAUR, Embry-Riddle Aeronautical University, United States

IAC-19.A1.1.9
ASSESSMENT OF THE EFFECTS OF ISOLATION, CONFINEMENT AND HYPOXIA ON SPACEFLIGHT PILOTING PERFORMANCE FOR FUTURE SPACE MISSIONS – THE SIMSKILL EXPERIMENT IN ANTARCTICA
Miquel Bosch Bruguera, Institute of Space Systems, Universität Stuttgart, Germany

IAC-19.A1.1.10
PSYCHOLOGICAL RESPONSE DURING LONG-TERM LOW METABOLISM EXPERIMENT
Manrui Wu, Beihang University (BUAA), China

IAC-19.A1.1.11
INTERACTIVE INTEREST-BASED NEGOTIATION TRAINING FOR MANAGING CONFLICT IN ISOLATED CONFINED ENVIRONMENTS
Jennifer Fleischer, Duke University, United States

IAC-19.A1.1.12
ARE FINDINGS IN ICE PSYCHOLOGY GENERALIZABLE AND REPLICABLE? THE EXAMPLE OF COPING STRATEGY
Peter Suedfeld, University of British Columbia, Canada

A1.2. Human Physiology in Space

October 22 2019, 09:45 — 143B

Co-Chair(s): Inesa Kozlovskaya, State Scientific Center of the Russian Federation - Institute of Biomedical Problems of the Russian Academy of Sciences, Russian Federation; Jens Jordan, Institute of Aerospace Medicine (DLR), Germany;
Rapporteur(s): Elena Fomina, State Scientific Center of Russian Federation, Institute of Biomedical Problems, Russian Academy of Sciences, Russian Federation;

IAC-19.A1.2.1
ASSESSMENT OF THE NASA RESEARCH PROGRAM RESEARCH PORTFOLIO
Victor Schneider, NASA, United States

IAC-19.A1.2.2
INDIVIDUAL LOCOMOTION STRATEGIES FOR DIFFERENT STAGES OF A LONG-TERM SPACE MISSION
Elena Fomina, FSC RF-IMBP, Russian Federation

IAC-19.A1.2.3 (withdrawn)
EVALUATION OF THE EFFECTS OF 60-DAYS HEAD-DOWN BED REST AND NUTRITIONAL COUNTERMEASURE ON CARDIAC CIRCADIAN RHYTHMS
Sarah Solbiati, Politecnico di Milano, Italy

IAC-19.A1.2.4
EFFECT AND RECOVERY OF LONG-DURATION SPACEFLIGHT ON THE VENTRICLES OF THE ASTRONAUT'S BRAIN.
Angelique Van Ombergen, ESA, Belgium

IAC-19.A1.2.5
IMPACT OF LONG DURATION SPACE FLIGHT ON THE BRAIN STRUCTURE OF SPACE CREW MEASURED WITH VOXEL AND SURFACE BASED MORPHOMETRIC METHODS USING MRI
Angelique Van Ombergen, ESA, Belgium

IAC-19.A1.2.6
IMPLEMENTATION OF MACHINE LEARNING TO GAUGE HUMAN RESPONSE TO NOISE TO ELIMINATE ITS ADVERSE EFFECTS ONBOARD SPACECRAFT
Menachem Rafaelof, National Institute of Aerospace, United States

IAC-19.A1.2.7 (withdrawn)
MODELING FORCES OF THE MOBILE GRAVITY SUIT FOR LONG-DURATION SPACEFLIGHT
Neeki Ashari, University of California, San Diego, United States

IAC-19.A1.2.8
THE ACOUSTIC DIAGNOSTICS EXPERIMENT OF THE MISSION BEYOND: ADVANCED OTOACOUSTIC TESTS ON THE INTERNATIONAL SPACE STATION
Arturo Moleti, Università di Roma "Tor Vergata", Italy

IAC-19.A1.2.9
COMPUTATIONAL FLUID DYNAMICS APPLIED TO THE STUDY OF RELATIVE MOTION BETWEEN CALCIUM CRYSTALS AND ENDOLYMPH.
Misael Chagas, Brazil

IAC-19.A1.2.10 (withdrawn)
NOVEL APPROACH TO COUNTERMEASURES USING SOFT ROBOTICS
Renee Verhoeven, United Kingdom

IAC-19.A1.2.11
COGNITIVE FUNCTION OF SUBORBITAL SPACECRAFT PILOTS
Erik Seedhouse, United States

IAC-19.A1.2.12
THE EFFECTS OF 7 DAYS OF WHOLE BODY UNLOADING USING A HYPER BUOYANCY FLOTATION (HBF) BED ON SKELETAL MUSCLE MASS
Tessa Morris-Paterson, King's College London, United Kingdom

IAC-19.A1.2.13
NUMERICAL SIMULATION OF CARDIOVASCULAR SYSTEM DECONDITIONING IN DIFFERENT MICROGRAVITY MISSION SCENARIOS. RISK ASSESSMENT AND COUNTERMEASURES.
Antoni Perez-Poch, Universitat Politecnica de Catalunya (UPC BarcelonaTech), Spain

IAC-19.A1.2.14
MITIGATING THE EFFECTS OF FREE-FALL ADAPTATION USING VESTIBULAR YOGA TRAINING
Amanda Winters, United States

A1.3. Medical Care for Humans in Space

October 22 2019, 14:45 — 143B

Co-Chair(s): Satoshi Iwase, Aichi Medical University, Japan; Oleg Orlov, SSC RF-Institute of Biomedical Problems RAS, Russian Federation;
Rapporteur(s): Ulrich Kuebler, Airbus DS GmbH, Germany;

IAC-19.A1.3.1
EFFECT OF DIFFERENT SHORT RADIUS CENTRIFUGE ROTATION REGIMES ON ELECTROLYTES CONCENTRATION AND MARKERS OF THE CARDIOVASCULAR SYSTEM IN VOLUNTEERS- SUBJECTS
Galina Vassilieva, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

IAC-19.A1.3.2
EFFECT OF ARTIFICIAL GRAVITY WITH EXERCISE ON SPACEFLIGHT DECONDITIONING IN HUMANS AND PROJECT FOR ASSESSMENT OF ARTIFICIAL GRAVITY IN H-II TRANSFER VEHICLE IN INTERNATIONAL SPACE STATION — AS WELL AS THE DEEP SPACE GATEWAY.
Satoshi Iwase, Aichi Medical University, Japan

IAC-19.A1.3.3
MISSION BEYOND: THE NUTRISS EXPERIMENT ON BOARD THE INTERNATIONAL SPACE STATION
Gianni Biolo, Università degli studi di Trieste, Italy

IAC-19.A1.3.4
ARTIFICIAL GRAVITY WITH CENTRIFUGE AND OPTIMAL DOSE OF THE INTERVENTION TO COUNTERACT GAIT ALTERATION IN RATS EXPOSED TO SIMULATED MICROGRAVITY
Junichi Tajino, Kyoto University, Japan

IAC-19.A1.3.5
A SLIDING WINDOW REAL-TIME PROCESSING APPROACH FOR ANALYSIS OF HEART RATE VARIABILITY DURING SPACEFLIGHT
Anastasiia Prysyazhnyuk, University of Ontario Institute of Technology (UOIT), Canada

IAC-19.A1.3.6
CASE-BASED MEDICAL LEARNING FOR LONG DURATION SPACE TRAVEL
Victor Schneider, NASA, United States

IAC-19.A1.3.7
INVESTIGATING THE FEASIBILITY AND DESIGN OF A MICROGRAVITY SURGICAL WORKSTATION
Eleonor Frost, University College London (UCL), United Kingdom

IAC-19.A1.3.8
EFFECTS OF MICROGRAVITY ON THE FORMATION OF DENTAL CARIES
Rachel Stubits, University of Toronto, Canada

IAC-19.A1.3.9
A VIRTUAL PERSONAL ASSISTANT AS PSYCHOLOGICAL COUNSELING TOOL TO SUPPORT HUMAN EXPLORATION OF DEEP SPACE.
Jules Lancee, The Netherlands

IAC-19.A1.3.10
DEVELOPING EXPONENTIAL TECHNOLOGIES FOR SPACE TELEANESTHESIA, SPACE TELESURGERY AND MENTAL HEALTH TO MAINTAIN AND SUPPORT ANALOG ASTRONAUTS DURING SIMULATION MISSIONS IN ISOLATED, CONFINED ENVIRONMENTS (I.C.E) AND FUTURE SETTLEMENT ON MARS.
Susan Ip-jewell, Mars Academy USA, United States

IAC-19.A1.3.11
"CLEON" MECHANICAL, CLEANSING AND NON-INVASIVE CANCER THERAPY MEDICATION DEVICE, A PRELIMINARY DESIGN AND PROSPECTIVE TO MAINTAIN ASTRONAUT'S HEALTH AND PERFORMANCE
Akhsanto Anandito, KTH Royal Institute of Technology, Sweden

IAC-19.A1.3.12
MEDICAL IN SPACE
Felix Ajibuwa, Nigeria

IAC-19.A1.3.13
CIS-LUNAR ORBITAL MEDICAL FACILITY AND ROADMAP
Keith Crisman, Florida Institute of Technology, United States

IAC-19.A1.3.14 (withdrawn)
DEVELOPING A COMPETENCY MAP FOR SPACE MEDICINE EDUCATION
Katie Samoil, Canada

IAC-19.A1.3.15
STUDY ON THE DEVELOPMENT OF A PHARMACEUTICAL KIT FOR LONG-DURATION DEEP-SPACE HUMAN SPACEFLIGHT
Oscar Ojeda, Purdue University, United States

IAC-19.A1.3.16
THE CASE FOR SPACE: SURGICAL READINESS FOR DEEP SPACE MISSIONS
Danielle Carroll, University of California, San Diego, United States

IAC-19.A1.3.17
CONCEPTUALIZATION OF A MEDICAL SUPPORT UNIT DESIGNED TO SUSTAIN CREW HEALTH DURING DEEP SPACE TRANSIT
Cuilee Sha, University of Michigan, Ann Arbor, United States

IAC-19.A1.3.18
CYCLING TO THE MOON AND ROWING TOWARDS MARS
Maja Tommerup, Danish Aerospace Company ApS, Denmark

IAC-19.A1.3.19
ARTIFICIAL INTELLIGENCE AS A BEHAVIOURAL COUNTERMEASURE
Ilaria Cinelli, Tufts University, United States

IAC-19.A1.3.20
SLEEP MONITORING
Thomas Beckingham, University of Liverpool, United Kingdom

A1.4. Medicine in Space and Extreme Environments

October 23 2019, 14:45 — 143B

Co-Chair(s): Oleg Orlov, SSC RF-Institute of Biomedical Problems RAS, Russian Federation; Hanns-Christian Gunga, Charité Universitätsmedizin Berlin, Germany;
Rapporteur(s): Jeffrey R. Davis, Exploring 4 Solutions, United States; Jancy McPhee, The Aerospace Corporation, United States;

IAC-19.A1.4.1
MARS MEDICS ANALOG ASTRONAUT MISSION DURING AUSTERE I.C.E (ISOLATED AND CONFINEMENT ENVIRONMENT) – NEPAL SCENARIO
Karan Ghatora, United Kingdom

IAC-19.A1.4.2
ANALYZING COUNTERMEASURE EFFECTIVENESS UTILIZING BIG DATA ANALYTICS FOR SPACE MEDICINE DECISION SUPPORT: A CASE STUDY
Jennifer Yeung, Ontario Tech University, Canada

IAC-19.A1.4.3
POLICY RESEARCH CONSIDERATIONS FOR THE SELECTION AND USE OF ANALOGS
Victor Schneider, NASA, United States

IAC-19.A1.4.4
POLICY AND COORDINATION BETWEEN MEDICAL OPERATIONS & BEHAVIORAL RESEARCH
Victor Schneider, NASA, United States

IAC-19.A1.4.5
SUPPLEMENTING VIRTUAL REALITY TOOLS FOR EMPATHY, AUTHENTIC RELATIONS, AND CONFLICT RESOLUTION FOR ANALOG ASTRONAUTS LIVING IN ISOLATED, CONFINED, AND EXTREME (ICE) ENVIRONMENTS
Ksenia Benifand, Mars Academy USA, United States

IAC-19.A1.4.6
EXAMINING EFFECTS OF COSMIC RADIATION ON THE ACTIVITY OF HIV-1 LATENCY REVERSAL USING CUBESAT PAYLOADS
Donya Naz Divsalar, Simon Fraser University, Canada

IAC-19.A1.4.7
CITIZEN-SCIENTIST ASTRONAUT CANDIDATE EXPERIENCES WITH WILDERNESS, SPACE AND EXTREME ENVIRONMENT MEDICINE AND FIELD PROTOCOLS FOR A MEDICAL LAY-AUDIENCE
Shawna Pandya, University of Saskatchewan, Canada

IAC-19.A1.4.8
SIMULATION-BASED TRAINING WITH EXPONENTIAL TECHNOLOGIES TO MAINTAIN HEALTH AND WELLNESS FOR ANALOG ASTRONAUTS LIVING IN ICE AND VIABILITY IN AUSTERE ENVIRONMENTS
Janet Biggs, Mars Academy USA, United States

IAC-19.A1.4.9
EMERGENT SURGERY ON DEEP SPACE MISSIONS: A CURRICULAR MODEL FOR PROCEDURAL TRAINING, PRACTICE, AND REAL-TIME GUIDANCE
Danielle Carroll, University of California, San Diego, United States

IAC-19.A1.4.10
THE BRAIN IN DEEP SPACE: IDENTIFYING "POTENTIAL" SYNERGISTIC RISKS OF SPACE RADIATION, ISOLATION & CONFINEMENT, AND ALTERED GRAVITY TO BEHAVIOR AND PERFORMANCE
Thomas Williams, NASA, United States

IAC-19.A1.4.11
EFFECTS OF LOWER-BODY NEGATIVE PRESSURE (LBNP) ON FLUID DISTRIBUTION DURING GRAVITATIONAL UNLOADING
Katie Harris, International Space University (ISU), France

IAC-19.A1.4.12
REVIEW OF POTENTIAL EXACERBATING FACTORS FOR SPACEFLIGHT-ASSOCIATED NEURO-OCULAR SYNDROME (SANS) AND EXPLORATION OF MITIGATION STRATEGIES
Bal Dhital, Australia

IAC-19.A1.4.13
FUTURE STUDIES OF THE ROLE OF IMMUNE STATUS IN REGENERATION OF SKIN COVERING OF SPACE MISSIONS CREWMEMBERS
Ivan Vasilev, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

IAC-19.A1.4.14
MYOTONES | INFLIGHT MUSCLE HEALTH STATUS MONITORING DURING LONG-DURATION SPACE MISSIONS ONBOARD THE INTERNATIONAL SPACE STATION: A SINGLE CASE STUDY
Dieter Blottner, Charité Universitätsmedizin Berlin, Germany

IAC-19.A1.4.15
MIRA - A MEDICAL PARADIGM SHIFT TO CANCER TREATMENT BANED ON A PULSED PLASMA PROPULSION SYSTEM
Norbert Frischauf, TU Graz, Austria

A1.5. Radiation Fields, Effects and Risks in Human Space Missions

October 24 2019, 09:45 — 143B

Co-Chair(s): Guenther Reitz, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Lawrence Pinsky, University of Houston, United States;
Rapporteur(s): Premkumar Saganti, Prairie View A&M University, United States;

IAC-19.A1.5.1
DYASTIMA: SIMULATING AIR SHOWERS IN THE ATMOSPHERE OF A PLANET
Anastasia Tezari, National and Kapodistrian University Of Athens, Greece

IAC-19.A1.5.2
CALCULATED DOSES AND SPECTRA OF ENERGY AND ANGLE OF ALBEDO PARTICLES EMITTED BY THE LUNAR SURFACE
Fahad Zaman, University of Tennessee, United States

IAC-19.A1.5.3
TRITEL INSTRUMENT ON-BOARD THE EUROPEAN STUDENT EARTH ORBITER TO MEASURE SPACE RADIATION
Balazs Zabori, MTA Centre for Energy Research, Hungary

IAC-19.A1.5.4
UPDATE ON THE DEVELOPMENT OF THE NEW TIMEPIX2 DETECTOR FOR FUTURE SPACE RADIATION MEASUREMENT APPLICATIONS
Lawrence Pinsky, University of Houston, United States

IAC-19.A1.5.5
ASTRORAD RADIATION PROTECTIVE EQUIPMENT EVALUATIONS ON ORION AND ISS
Gideon Waterman, StemRad, Israel

IAC-19.A1.5.6
NASA'S GALACTIC COSMIC RAY SIMULATOR AT BROOKHAVEN NATIONAL LABORATORY: ENABLING HUMAN EXPLORATION MISSIONS TO THE MOON AND MARS
Lisa Simonsen, NASA LaRC, United States

IAC-19.A1.5.7
PROTON AND FE ION-INDUCED EARLY AND LATE CHROMOSOME ABERRATIONS IN DIFFERENT CELL TYPES
Rosalin Goss, National Aeronautics and Space Administration (NASA), Johnson Space Center, United States

IAC-19.A1.5.8
PERSONAL RADIATION SHIELDING FOR DEEP SPACE MISSIONS
Davide Carabellese, Politecnico di Torino, Italy

IAC-19.A1.5.9
OPTIMIZATION OF DEEP SPACE HABITATS FOR THE SPACE RADIATION ENVIRONMENT
Matthew Lund, University of Utah, United States

IAC-19.A1.5.10
IMPROVING TRAPPED PROTON MODEL ON THE LOW-EARTH ORBIT WITH CCSRM CUBESATS MEASUREMENTS
Mikhail Dobynde, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.A1.5.11
LOW-EARTH ORBIT AS ANATURAL LAB FOR RADIOBIOLOGICAL STUDIES OF AN INTERPLANETARY FLIGHT
Mikhail Dobynde, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.A1.5.12
COMPARISONS OF RADIATION SPECTRA ON THE ISS AND IN DEEP SPACE
Livio Narici, University of Rome - Tor Vergata, Italy

IAC-19.A1.5.13
EUROPEAN RADIATION FACILITIES NETWORK (ERFNET)
Livio Narici, University of Rome - Tor Vergata, Italy

A1.6. Astrobiology and Exploration

October 24 2019, 14:45 — 143B

Co-Chair(s): Petra Rettberg, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Nicolas Walter, European Science Foundation, France;
Rapporteur(s): Stefan Leuko, DLR (German Aerospace Center), Germany;

IAC-19.A1.6.1
IMPLEMENTING BIOBURDEN REDUCTION AND CONTROL ON THE DELIQUESCENT HYDROGEL OF THE EXOMARS, HABIT INSTRUMENT
Thasshwin Mathanlal, Luleå University of Technology, Sweden

IAC-19.A1.6.2
BIOREDUCTION OF SOLID ROCKET MOTORS FOR PLANETARY PROTECTION
Yo-Ann Velez Justiniano, Jacobs, United States

IAC-19.A1.6.3
A NEW PREVENTIVE ACTING BIOINSPIRED ANTIMICROBIAL SURFACE – ACTUAL STATUS AND FIRST RESULTS
Matthias Dünne, OHB System AG-Bremen, Germany

IAC-19.A1.6.4
ANTI-MICROBIAL POLYMER DEVELOPMENT FOR SPACECRAFT CABIN DISEASE & SYSTEM CONTAMINATION
Jason Armstrong, Boeing, Australia

IAC-19.A1.6.5
CHARACTERIZATION AND MEASUREMENT OF SPACECRAFT AIRBORNE PARTICULATE MATTER
Marit Meyer, NASA Glenn Research Center, United States

IAC-19.A1.6.6
PLEIADES: A HIGHLY INTEGRATED LAB-ON-CHIP SYSTEM FOR THE DETECTION OF LIFE-MARKERS IN EXTRATERRESTRIAL ENVIRONMENTS
Augusto Nascetti, Sapienza University of Rome, Italy

IAC-19.A1.6.7
APPLICATION OF SACCHAROMYCES CEREVISIAE AND PENICILLIUM CHRYSOGENUM IN THE BIOLEACHING OF HEAVY METALS FROM THE METEORITIC MATERIAL (CHONDRITE TYP H) : A PERSPECTIVE TOOL FOR PRODUCING A SHIELD FROM COSMIC RADIATION
Artur Kleina, Poland

IAC-19.A1.6.8
AN INSTRUMENT BASED SOLUTION FOR FORWARD CONTAMINATION
Srinivasa Bhattaru, Massachusetts Institute of Technology (MIT), United States

IAC-19.A1.6.9
DIRECT ASTROBIOLOGICAL SAMPLING OF ENCELADUS' SUBSURFACE VENTS FOR THE MICROLIFE INSTRUMENT SUITE
Shubhank Sondhiya, Carleton Univeristy, Canada

IAC-19.A1.6.10
ICEXPOSE:ICY EXPOSURE OF MICROORGANISMS
Corinna Panitz, RWTH Aachen University, Germany

IAC-19.A1.6.11
BLUE-GREEN CYANOBACTERIA PLECTONEMA BORYANUM UTEX B 485 CULTIVATION UNDER LOW PRESSURE ANAEROBIC CONDITIONS (WITH A HIGH CONTENT OF CARBON DIOXIDE) SIMULATING MARTIAN ATMOSPHERE
Artur Kleina, Poland

IAC-19.A1.6.12
EVOLUTION WITH SEASONS OF THE ORGANIC CONTENT ON TITAN : FROM ITS ATMOSPHERE TO THE SURFACE
Athena Coustenis, LESIA, France

IAC-19.A1.6.13
SELECTIVE UPTAKE OF RARE EARTH ELEMENTS IN MARINE SYSTEMS AS AN INDICATION OF AND CONTROL ON AEROBIC BACTERIAL METHANOTROPHY
Annaliese Meyer, University of Victoria, Canada

A1.7. Life Support, habitats and EVA Systems

October 25 2019, 09:45 — 143B

Co-Chair(s): Klaus Slenzka, OHB System AG-Bremen, Germany; Khalid Badri, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates;
Rapporteur(s): Hong Liu, Beihang University, China;

IAC-19.A1.7.1
NASA ADVANCED EXPLORATIONS SYSTEMS: 2019 ADVANCEMENTS IN LIFE SUPPORT SYSTEMS
Walter Schneider, National Aeronautics and Space Administration (NASA), United States

IAC-19.A1.7.2
THE WAY OF INDIGENOUS PEOPLES - 3D PRINTING SUSTAINABLE LUNAR BASES FROM IN-SITU RESOURCES
Alex Ellery, Space Exploration and Engineering Group, Carleton Univeristy, Canada

IAC-19.A1.7.3
PBR@LSR: THE ALGAE-BASED PHOTOBIOREACTOR EXPERIMENT AT THE ISS – OPERATIONS PHASE
Gisela Detrell, Institute of Space Systems, University of Stuttgart, Germany

IAC-19.A1.7.4
MEDIA RECYCLING SENSOR DEVELOPMENT FOR PHOTOBIOREACTORS
Sandra Podhajsky, OHB System AG-Bremen, Germany

IAC-19.A1.7.5
GREENHOUSE DESIGN CONCEPTS FOR MOON AND MARS
Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria

IAC-19.A1.7.6
LUNAR DUST MITIGATION AND CONTROL: AIR LOCK METHODS TO/FROM LIVING SPACE; ROTATING AND RECIPROCAL MACHINE LONGEVITY; SAFE DURATION OF EXPOSURE A METRIC SOUGHT
Thomas Mallard, United States

IAC-19.A1.7.7
WATER WALLS OVERVIEW
Marc M. Cohen, Space Cooperative Inc., United States

IAC-19.A1.7.8
DEVELOPMENT OF AN ENVIRONMENTAL CONTROL AND LIFE SUPPORT SYSTEM FOR DEEP SPACE AND COMMERCIAL VEHICLES
Phoebe Henson, United States

IAC-19.A1.7.9
MODELING AND SIMULATING A REGENERATIVE LIFE SUPPORT SYSTEM TO UNDERSTAND THE EFFECTS OF SYSTEM INTERACTION ON SURVIVABILITY DURING DEEP SPACE MISSIONS: AN AGENT-BASED APPROACH
Angelo C.J. Vermeulen, Delft University of Technology (TU Delft), The Netherlands

IAC-19.A1.7.10
METHODS OF THE SPACESUITS MOBILITY IMPROVEMENT
Eleonora Bykova, Moscow Aviation Institute (National Research Institute, MAI), Russian Federation

IAC-19.A1.7.11
DEVELOPMENT OF A SIX-FLUID ENVIRONMENTAL CONTROL AND LIFE SUPPORT SYSTEM MODEL FOR HUMAN SPACEFLIGHT APPLICATIONS
Daniel White, Embry-Riddle Astronautical University, United States

IAC-19.A1.7.12
MICROBIAL DYNAMICS IN THE CONFINED EDEN-ISS GREENHOUSE IN ANTARCTICA
Petra Rettberg, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.A1.7.13
EVALUATION OF AN ALTERNATIVE SOLUTION FOR WATER MICROBIAL MONITORING OF FECAL CONTAMINANTS FROM WATER IN THE INTERNATIONAL SPACE STATION
Christine Rozand, France

IAC-19.A1.7.14
3D PRINTING RECYCLABLE SPACEWEAR ON MARS: EQUIVALENT SYSTEM MASS TRADEOFF WITH TRADITIONAL TECHNIQUES
Paolo Pino, Politecnico di Torino, Italy

IAC-19.A1.7.15
BIOREFINERY CONCEPT FOR LONG TERM SPACE MISSION
Natalia Cwilichowska, Wroclaw University of Science and Technology, Poland

IAC-19.A1.7.16
PROFILING TOXIC LUNAR DUST DISSOLUTION IN AQUEOUS ENVIRONMENTS
Daniel Winterhalter, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.A1.7.17
PRODUCTION OF HIGHLY NUTRITIOUS VEGETABLES FOR LUNAR EXPLORATION
Luz Miranda Atilano Herrera, Universidad Popular Autónoma del Estado de Puebla, Mexico

A1.8. Biology in Space

October 25 2019, 13:30 — 143B

Co-Chair(s): Fengyuan Zhuang, Beihang University, China; Jancy McPhee, The Aerospace Corporation, United States;

IAC-19.A1.8.1
GROWTH ANALYSIS OF METHANOBREVIBACTER SMITHII ON-GROUND AND IN MICRO-GRAVITY
Raghavi C H, R.V.College of Engineering, India

IAC-19.A1.8.2
GROWTH DYNAMICS OF BACTERIA UNDER SIMULATED LUNAR AND MARTIAN GRAVITIES
Lily A. Allen, University of Colorado Boulder, United States

IAC-19.A1.8.3
MOISTURE AVAILABILITY AND MICROBIAL ACTIVATION IN SPACECRAFT
Ashleigh Bope, The Ohio State University College of Engineering, United States

IAC-19.A1.8.4
DIFFERENTIAL GENE EXPRESSION PATTERNS INDUCED BY PARABOLIC FLIGHT AND LOW-SHEAR MODELLED MICROGRAVITY IN SACCHAROMYCES CEREVISIAE
Sean Farley, University of Victoria, Canada

IAC-19.A1.8.5
SCALABLE MICROALGAE-BASED LIFE SUPPORT SYSTEM
Johannes Martin, IRS, University of Stuttgart, Germany

IAC-19.A1.8.6
GROWING GREEN ON MARS:AN EXPERIMENT TO EVALUATE GROWTH STUDIES OF VARIOUS SEEDS IN MARS SOIL.
Avishek Ghosh, Loughborough University, United Kingdom

IAC-19.A1.8.7
ENVIRONMENTAL RESEARCH AND GENETIC EXPRESSION IN NEW EARTH SIMILARITY STUDY
Pranit Patil, India

IAC-19.A1.8.8
BEES IN SPACE: ULMONITOR, THE BEEHIVE REMOTE CONTROL TOOL FOR THE MARS COLONIES, TESTED WITHIN THE NOAH'S ARK PROJECT CARRIED OUT IN ANALOG SPACE BASE LUNARES IN PILA, POLAND.
Ryszard Krzyśka, LUNARES Experts' Board, Poland

IAC-19.A1.8.9
THE FIDELITY OF DNA REPLICATION IN MICROGRAVITY
Aaron Rosenstein, Queen's University, Canada

IAC-19.A1.8.10
MICROAGE: MICROGRAVITY AS A MODEL FOR ACCELERATED SKELETAL MUSCLE AGEING
Malcolm Jackson, University of Liverpool, United Kingdom

IAC-19.A1.8.11
EFFECTS OF LOCOMOTOR GAITS UNDER SIMULATED REDUCED GRAVITY CONDITIONS ON MUSCLES AND JOINTS OF THE LEG
Sophie Orr, University of North Dakota, United States

IAC-19.A1.8.12
METHODS OF SEEDS PLANTING IN SPACE: SOIL-LESS OR NOT
Funmilola Adebisi Oluwafemi, National Space Research and Development Agency (NASRDA), Abuja, Nigeria

IAC-19.A1.8.13
A METHOD FOR STUDYING MLO-Y4 OSTEOCYTE RESPONSE TO SIMULATED MICROGRAVITY IN EMBEDDED 3D COLLAGEN DROPLET SCAFFOLDS
Roxanne Fournier, University of Toronto, Canada

IAC-19.A1.8.14 (withdrawn)
MICE TESTES AND DUCT DEFERENCE DURING SPACE FLIGHT (RR-4 EXPERIMENT): CYTOSKELETON STRUCTURE AND ITS REGULATION
Irina Ogneva, IBMP, Russian Federation

IAC-19.A1.8.15 (withdrawn)
EPIGENETIC EVENTS IN MICE' OVARIES AFTER MODELLING MICROGRAVITY
Maria A. Usik, IBMP, Russian Federation

IAC-19.A1.8.16 (withdrawn)
EEG SOURCE LOCALIZATION OF THE HUMAN BRAIN IN THE SPACE MICROGRAVITY ENVIRONMENT
Anwar Ali, Pakistan Space and Upper Atmosphere Research Commission, Pakistan

A1.IP. Interactive Presentations - IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Jancy McPhee, The Aerospace Corporation, United States; Klaus Slenzka, OHB System AG-Bremen, Germany;

IAC-19.A1.IP.1
COMPUTER-BASED BEHAVIORAL HEALTH COUNTERMEASURE EVALUATION DURING AN ANTARCTIC WINTER-OVER POPULATION AS SPACE ANALOGUE
Mackenzie Haberman, Dartmouth Medical School, United States

IAC-19.A1.IP.2
TIME-SERIES CHANGE IN INTERPERSONAL RELATIONSHIPS AND MENTAL HEALTH: 15-DAYS CONFINEMENT STUDY IN JAPAN.
Yuichi OI, University of Tsukuba, Japan

IAC-19.A1.IP.3
GENDER- AND VALUES-BASED FAULTLINES AS A PREDICTOR OF CREW RELATIONS
Tatem Burns, DePaul University, United States

IAC-19.A1.IP.4
IMMERSIVE NATURAL SCENES USING VIRTUAL REALITY FOR RESTORATION IN ISOLATED CONFINED ENVIRONMENTS
Aleksandra Stankovic, Dartmouth College, United States

IAC-19.A1.IP.5
RESULTS FROM HI-SEAS LONG DURATION MARS ANALOG SIMULATIONS
Simon Engler, University of Hawaii, United States

IAC-19.A1.IP.6
NASA HUMAN EXPLORATION RESEARCH ANALOG (HERA) RESEARCH STUDY ASSESSES CREW FITNESS FOR LONG-DURATION SPACE TRAVEL
Jonna Ocampo, United States

IAC-19.A1.IP.7
TEAM PERFORMANCE ANALYSIS OF A COLLABORATIVE SPATIAL ORIENTATION MISSION IN MARS ANALOGUE ENVIRONMENT
Baptiste Prébot, Laboratoire Intégration du Matériau au Système, France

IAC-19.A1.IP.8 (withdrawn)
COMPARISON OF DIFFERENT PLANTS CULTIVATION SYSTEMS IN FUTURE EXTRATERRESTRIAL COLONY
Joanna Kuźma, Wroclaw University of Science and Technology, Poland

IAC-19.A1.IP.9
BODY WEIGHT MAY PLAY A ROLE IN OCULAR PRESSURE IN SPACE: EVIDENCE FROM OBESITY STUDIES
Shawn Khan, University of Toronto, Canada

IAC-19.A1.IP.10
CARDIOVASCULAR DECONDITIONING DURING TWO MONTHS OF BED REST: COMPARISON OF WEARABLE MONITORING BASED ON BALLISTO- AND SEISMO-CARDIOGRAPHY WITH MRI
Jeremy Rabineau, Université Libre de Bruxelles, Belgium

IAC-19.A1.IP.11
UPGRADE THE CENTRIFUGAL MULTIPLE-EFFECT DISTILLER FOR DEEP SPACE MISSIONS
Vladimir Rifert, TERMODISTILLATION, Ukraine

IAC-19.A1.IP.12
DIGITAL IMAGE PROCESSING AND METABOLIC PARAMETER LINEARITY TO NON-INVASIVELY DETECT ANALYTE CONCENTRATION
Joseph Allen Jr., University of North Dakota, United States

IAC-19.A1.IP.13
BIOTECHNOLOGICAL STRATEGIES FOR SUSTAINED HUMAN PRESENCE ON MARS
Jaden Hastings, University of Melbourne, Australia

IAC-19.A1.IP.14
MOON DUST AND THE HUMAN EXPLORATION OF THE MOON - 2ND NESC LUNAR DUST WORKSHOP
Daniel Winterhalter, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.A1.IP.15
AN EXPLORATION OF HOW THE RELATIONSHIP BETWEEN THE GLYMPHATIC SYSTEM, SLEEP, AND CIRCADIAN RHYTHM IN THE MICROGRAVITY ENVIRONMENT MAY IMPACT NEURAL COGNITION AND NEURODEGENERATIVE DISEASE IN CREWED SPACEFLIGHT.
Bal Dhital, Australia

IAC-19.A1.IP.16
MODELING A LIFE SUPPORT SYSTEM FOR GROWING PLANTS ON MARS FOR OXYGEN PRODUCTION AND GAS FLOW CONTROL
Manuel Alvarez, Universidad de Ingeniería y Tecnología (UTEC), Peru

IAC-19.A1.IP.17 (withdrawn)
AEROPONIC CULTIVATION SUPPLIED WITH GREYWATER FOR FUTURE LONG-TERM SPACE MISSIONS
Anna Jurga, Wroclaw University of Science and Technology, Poland

IAC-19.A1.IP.18
COMMERCIAL SPACE STATIONS WITH ARTIFICIAL GRAVITATION AS REAL BUSINESS
Oleg Aleksandrov, Private individual www.oleg.space, United States

IAC-19.A1.IP.19 (withdrawn)
ANALYSIS OF MARTIAN SOIL AND VEGETATION ON MARS
Vikrant Boora, University of Petroleum and Energy Studies, India

A2. IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM

Coordinator(s): Gabriel Pont, Centre National d'Etudes Spatiales (CNES), France;
Vice-Coordinator(s): Valentina Shevtsova, Université Libre de Bruxelles, Belgium;

A2.1. Gravity and Fundamental Physics

October 21 2019, 15:00 — 143C

Co-Chair(s): Hanns Selig, GERADTS GMBH, Germany; Antonio Viviani, Università degli Studi della Campania "Luigi Vanvitelli", Italy;
Rapporteur(s): Qi Kang, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., China;

IAC-19.A2.1.1
STABLE OPTICAL AND VACUUM SYSTEMS FOR QUANTUM TECHNOLOGY APPLICATIONS IN SPACE
Moritz Mihm, Johannes Gutenberg University of Mainz, Germany

IAC-19.A2.1.2
IN-ORBIT-VERIFICATION OF OPTICAL CLOCK TECHNOLOGIES
Thilo Schuldt, German Aerospace Center (DLR), Bremen, Germany

IAC-19.A2.1.3
THE STRATOSPHERIC OPTICAL RUBIDIUM CLOCK EXPERIMENT
Kristen Cote, University of Toronto, Canada

IAC-19.A2.1.4
LARES 2 AN APPROVED MISSION FOR TESTING GENERAL RELATIVITY
Ignazio Ciufolini, Università del Salento, Italy

IAC-19.A2.1.5
ACES OPERATIONS: AN ISS EXTERNAL SCIENTIFIC PAYLOAD LOOKING FOR EXPERIMENTAL CONFIRMATIONS ON THE GENERAL RELATIVITY THEORY
Mauro Augelli, Centre National d'Etudes Spatiales (CNES), France

IAC-19.A2.1.6
EVALUATING ATMOSPHERIC DENSITY WITH MICROSCOPE DATA
Benny Rievers, ZARM, University of Bremen, Germany

IAC-19.A2.1.7
TESTING AND PRACTICAL USE OF GENERAL RELATIVISTIC CLOCK EFFECTS IN THE VICINITY OF THE EARTH
Claus Lämmerzahl, ZARM Fab GmbH, Germany

IAC-19.A2.1.8 (withdrawn)
COSMOLOGICAL PERTURBATIONS PRODUCED BY POINT-LIKE MASSES: ALL SCALES COVERED
Maxim Eingorn, North Carolina Central University, United States

IAC-19.A2.1.9
DROP YOUR THESIS! 2018 RESULTS: 4.74 SECONDS OF MICROGRAVITY CONDITIONS TO ENABLE FUTURE CUBESAT LANDINGS ON ASTEROIDS
Florian Gautier, France

IAC-19.A2.1.10
ROAR -- A GROUND-BASED EXPERIMENTAL FACILITY FOR ORBITAL AERODYNAMICS RESEARCH
Vitor Oiko, The University of Manchester, United Kingdom

A2.2. Fluid and Materials Sciences

October 23 2019, 09:45 — 143C

Co-Chair(s): Nickolay N. Smirnov, Moscow Lomonosov State University, Russian Federation; Satoshi Matsumoto, Japan Aerospace Exploration Agency (JAXA), Japan;
Rapporteur(s): Thomas Driebe, DLR (German Aerospace Center), Germany;

IAC-19.A2.2.1 (non-confirmed)
ADVANCED MATERIALS RESEARCH AT THE ISS U.S. NATIONAL LABORATORY
Clinton Randy Giles, United States

IAC-19.A2.2.2
THE ACTION OF SPATIAL HEAT RELEASE MODULATION AT THE INTERFACE ON NONLINEAR FLOWS IN TWO-LAYER SYSTEMS
Ilya Simanovskii, TECHNION - Israel Institute of Technology, Israel

IAC-19.A2.2.3
STUDY ON THERMOCAPILLARY-BUOYANCY MIGRATION OF AXISYMMETRIC TWO DROPS
Li DUAN, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., China

IAC-19.A2.2.4 (non-confirmed)
MANIPULATION AND EVAPORATION OF COLLOIDAL DROPLET IN SPACE
Yuren Wang, Institute of Mechanics, Chinese Academy of Sciences, China

IAC-19.A2.2.5
SUPERCRITICAL WATER (SCW) INVESTIGATIONS IN THE DECLIC AND DECLIC-EVO: PAST, PRESENT AND FUTURE
Michael Hicks, National Aeronautics and Space Administration (NASA), United States

IAC-19.A2.2.6 (withdrawn)
MODELING THE FRONT PROPAGATION OF THE THERMITE REACTION BETWEEN HEMATITE AND ALUMINA WITH NON-CONSTANT THERMODYNAMIC PROPERTIES
Kesiany Souza, Aeronautic Institute of Technology (ITA), Brazil

IAC-19.A2.2.7
LATERAL SLOSHING OF MAGNETIC LIQUIDS IN MICROGRAVITY
Álvaro Romero-Calvo, Politecnico di Milano, Italy

IAC-19.A2.2.8
LIQUID SLOSHING IN STORAGE TANK IN MICROGRAVITY
KAI LI, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., China

IAC-19.A2.2.9
PRELIMINARY IDEA OF FUTURE FLUID PHYSICS RESEARCH OF CHINESE SPACE STATION
Jin Zhaojun, Chinese Academy of Sciences, China

IAC-19.A2.2.10
OPERATING CHARACTERISTICS ANALYSIS OF THERMODYNAMIC VENT SYSTEM FOR CRYOGENIC PROPELLANT ON-ORBIT
Shaohua Zhang, China Academy of Launch Vehicle Technology(CALT), China

A2.3. Microgravity Experiments from Sub-Orbital to Orbital Platforms

October 23 2019, 14:45 — 143C

Co-Chair(s): Raffaele Savino, University of Naples "Federico II", Italy; Rainer Willnecker, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;
Rapporteur(s): Peter Hofmann, OHB System AG - Munich, Germany;

IAC-19.A2.3.1
AN INVESTIGATION OF THE LABORATORY-BASED AND MICROGRAVITY CENTRIFUGAL CASTING OF PARAFFIN WAX
Javier Stober, Massachusetts Institute of Technology (MIT), United States

IAC-19.A2.3.2
EXPERIMENTAL INVESTIGATION OF DROP EVAPORATION IN MICROGRAVITY ONBOARD CHINESE SATELLITE SJ10
Qiu-Sheng Liu, Institute of Mechanics, Chinese Academy of Sciences, China

IAC-19.A2.3.3
GRAVITY AND DIRECTION OF BODY ACCELERATION INFLUENCE PERCEPTION OF DISTANCES DURING A PARABOLIC FLIGHT.
Nuno Loureiro, Portugal

IAC-19.A2.3.4
SPACE EXPERIMENTAL STADY ON THE VOLUME RATIO EFFECT AND TRANSITION PROCESSES OF THERMOCAPILLARY CONVECTION
Qi Kang, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., China

IAC-19.A2.3.5
CAN FROZEN SPERM SAMPLES WITHSTAND BEING SENT TO SPACE? CONSIDERING THE CREATION OF A SPERM BANK OUTSIDE EARTH.
Montserrat Boada, Institut Universitari Dexeus, Spain

IAC-19.A2.3.6
THE PATHWAY TO LAUNCH THE MAIUS-2/3 PAYLOAD ON A SOUNDING ROCKET
Michael Elsen, ZARM University of Bremen, Germany

IAC-19.A2.3.7
PRELIMINARY RESULTS FROM HEDGEHOG REXUS PROJECT – SOUNDING ROCKET EXPERIMENT ON ACCELERATIONS, VIBRATIONS AND HEAT FLOW
Adam Dąbrowski, Blue Dot Solutions, Poland

IAC-19.A2.3.8
VALIDATION OF A NEW MASS GAUGING METHOD FOR ELECTRIC PROPULSION TANKS ON-BOARD THE 70TH ESA PARABOLIC FLIGHT CAMPAIGN
Álvaro Tomás Soria Salinas, Luleå University of Technology, Sweden

IAC-19.A2.3.9
SIMULATING THE INTERMEDIATE AXIS THEOREM USING MATLAB AND AUTODESK FUSION 360
Nathan Bane, United States

IAC-19.A2.3.10
DEVELOPING SMART PAYLOAD SERVICING MODULES FOR SUBORBITAL SPACE SERVICING
Hamed Gamal, Czech Republic

IAC-19.A2.3.11
A DESIGN AND PERFORMANCE EVALUATION OF PASSIVE MICROGRAVITY SENSOR
Thakdanai Sirisombat, Princess Chulabhorn Science High School Nakhon Si Thammarat, Thailand

A2.4. Science Results from Ground Based Research

October 24 2019, 09:45 — 143C

Co-Chair(s): Valentina Shevtsova, Université Libre de Bruxelles, Belgium; Antonio Viviani, Università degli Studi della Campania "Luigi Vanvitelli", Italy;
Rapporteur(s): Nickolay N. Smirnov, Moscow Lomonosov State University, Russian Federation;

IAC-19.A2.4.1
KEYNOTE: FLUID PHYSICS FROM INTERNATIONAL SPACE STATION
Satoshi Matsumoto, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A2.4.2
EXPERIMENTAL EXAMINATION OF THE THERMODYNAMIC STABLE STATES OF WATER IN A NEAR WEIGHTLESS ENVIRONMENT WHEN CONFINED WITHIN AN ISOLATED AXISYMMETRIC CONTAINER: IMPLICATIONS FOR FUTURE SPACECRAFT DESIGN
Aaron H. Persad, Massachusetts Institute of Technology (MIT), United States

IAC-19.A2.4.3 (withdrawn)
DCMIX EXPERIMENT: SORET AND DIFFUSION COEFFICIENTS IN A TERNARY MIXTURE IN CONVECTION-FREE ENVIRONMENT
Valentina Shevtsova, Université Libre de Bruxelles, Belgium

IAC-19.A2.4.4 (non-confirmed)
PREPARATION OF THE DCMIX4 EXPERIMENT - MEASUREMENT OF THE DIFFUSION COEFFICIENTS OF THE TERNARY SYSTEMS WITH C60 FULLERENE WITH THE OPEN ENDED CAPILLARY AND NMR
Stefan Van Vaerenbergh, Université Libre de Bruxelles, Belgium

IAC-19.A2.4.5
SINGLE BUBBLE SONOLUMINESCENCE MICROGRAVITY EXPERIMENT DESIGN AND PRELIMINARY RESULTS
James Hurrell, International Space University (ISU), United Kingdom

IAC-19.A2.4.6
FREE SURFACE RECONSTRUCTION OF OPAQUE LIQUIDS FOR \\ EXPERIMENTAL SLOSHING ANALYSES IN MICROGRAVITY
Álvaro Romero-Calvo, Politecnico di Milano, Italy

IAC-19.A2.4.7 (withdrawn)
PRACTICAL APPLICATION OF ELECTROLYSIS ON THE MOON ENVIRONMENT CONDITION.
Robert Bruns, Space Mining Technologies, Germany

IAC-19.A2.4.8
EARLY TIME BACTERIA ADHESION ON CHANNEL SURFACES UNDER TERRESTRIAL GRAVITY
Christopher Lambert, United States

IAC-19.A2.4.9
GRAVITY AND MICROHYDRODYNAMIC EFFECTS ON BACTERIA TRANSPORT IN BIOCOLLOIDS
Nikolaos Gatsonis, Worcester Polytechnic Institute, United States

IAC-19.A2.4.10
RECENT PROGRESS OF CHINESE MICROGRAVITY MATERIALS SCIENCE RESEARCH AND FUTURE MATERIAL SCIENCE RESEARCH PROJECTS OF CHINA SPACE STATION
Yingyi Zhang, CSU, China

IAC-19.A2.4.11
INVESTIGATIONS INTO COTTON GROWTH ON THE MOON: EXTRAPOLATION OF GROWTH RATE FROM MICROGRAVITY SIMULATIONS AND EARTH GRAVITY
Funmilola Adebisi Oluwafemi, National Space Research and Development Agency (NASRDA), Abuja, Nigeria

A2.5. Facilities and Operations of Microgravity Experiments

October 24 2019, 14:45 — 143C

Co-Chair(s): Rainer Willnecker, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Gabriel Pont, Centre National d'Etudes Spatiales (CNES), France;
Rapporteur(s): Satoshi Matsumoto, Japan Aerospace Exploration Agency (JAXA), Japan;

IAC-19.A2.5.1
FROM GROUND-BASED MICROGRAVITY FACILITIES TO SUBORBITAL FLIGHTS
Thorben Könemann, ZARM Fab GmbH, Germany

IAC-19.A2.5.2
INVESTIGATING ASTEROID SURFACE GEOPHYSICS WITH AN ULTRA-LOW-GRAVITY CENTRIFUGE IN LOW-EARTH ORBIT
Stephen Schwartz, University of Arizona, United States

IAC-19.A2.5.3
BAMMSAT RECENT DEVELOPMENT: A BIOCUBESAT HARDWARE PLATFORM TO ENABLE BIOLOGICAL STUDIES IN SPACE.
Aqeel Shamsul, Cranfield University, United Kingdom

IAC-19.A2.5.4
GLIDE, WITHOUT G – A SYSTEMATIC QUANTIFICATION OF GLIDERS 0-G FLIGHT CAPABILITIES
Camille Gontier, LIDE, France

IAC-19.A2.5.5
MIGROP - PARABOLIC FLIGHT WITH LIGHT AIRCRAFT – ON THE THRESHOLD OF THE MARKET LAUNCH
Hanns Selig, GERADTS GMBH, Germany

IAC-19.A2.5.6
FREQUENT MICROGRAVITY SUBORBITAL SERVICE - A DOOR OPENER TO SPACE FOR ALL
Gunnar Florin, SSC, Sweden

IAC-19.A2.5.7
A MISSION CONTROL SYSTEM FOR MICROGRAVITY PLATFORMS BUILT ON OPEN SOURCE TECHNOLOGIES
Hauke Müntinga, University of Bremen - ZARM, Germany

IAC-19.A2.5.8
NEW SHEPARD PAYLOAD ACCOMMODATIONS AND FLIGHT HISTORY
Erika Wagner, Blue Origin LLC, United States

IAC-19.A2.5.9
TELEDYNE AND BRADFORD ENGINEERING'S MULTI-PURPOSE GLOVEBOX FOR DEEP SPACE GATEWAY – EVOLUTION OF SPACE GLOVEBOX TECHNOLOGY
Paul Galloway, Teledyne Brown Engineering, United States

IAC-19.A2.5.10
THE SPACE FOUNDRY LAB MODULE ON THE ISS: A COMMERCIAL AND UPGRADED ELECTROMAGNETIC LEVITATION FURNACE FOR METAL RESEARCH IN SPACE
Jan Walter Schroeder, CisLunar Industries, Germany

IAC-19.A2.5.11
A PROTOTYPE OF MICROGRAVITY FACILITY OPERATED BY LINEAR MOTORS: MOTION PLAN AND CONTROL
Yuman Li, University of Chinese Academy of Sciences; Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, China

A2.6. Microgravity Sciences on board ISS and beyond

October 25 2019, 09:45 — 143C

Co-Chair(s): Bernard Zappoli, Centre National d'Etudes Spatiales (CNES), France; Angelika Diefenbach, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;
Rapporteur(s): Peter Hofmann, OHB System AG - Munich, Germany;

IAC-19.A2.6.1
DECLIC EVO: REPAIR, UPGRADE, AND NEW SCIENCE OBJECTIVES
Remi Canton, Centre National d'Etudes Spatiales (CNES), France

IAC-19.A2.6.2
IN SITU OBSERVATION OF GROWTH DYNAMICS IN DECLIC DIRECTIONAL SOLIDIFICATION INSERT ONBOARD ISS: DSI-R FLIGHT CAMPAIGN
Fatima Mota, IM2NP - Aix-Marseille Université & CNRS UMR 7334, France

IAC-19.A2.6.3
BECCAL – COLD ATOMS ON THE INTERNATIONAL SPACE STATION
Marvin Warner, ZARM University of Bremen, Germany

IAC-19.A2.6.4
IN-ORBIT OPERATION AND PRELIMINARY ANALYSIS OF THE ISS EXPERIMENT PAPELL
Kira Grunwald, KSat e.V., Germany

IAC-19.A2.6.5
ANALYSIS OF THE MICROGRAVITY RESEARCH ECOSYSTEM AND MARKET DRIVERS OF ACCESSIBILITY
Christine Joseph, Massachusetts Institute of Technology (MIT), United States

IAC-19.A2.6.6
IN SITU SPACE PROTEIN CRYSTAL GROWTH: A NEW APPROACH TO CONDUCTING PCG RESEARCH ON ISS
April Spinale, International Space Station (ISS) U.S. National Laboratory, United States

IAC-19.A2.6.7
THE THREE MELFI FREEZERS IN ISS OFFERING EXTENDED LIFE AND OUTSTANDING PERFORMANCE FOR LIFE SCIENCE
Jean Chegançaș, Airbus Defence and Space, France

IAC-19.A2.6.8
AIM (ARTERY IN MICROGRAVITY): DESIGN AND DEVELOPMENT OF AN ICE CUBES EXPERIMENT
Olivia Drayson, ISAE-Supaero University of Toulouse, United Kingdom

IAC-19.A2.6.9
MISSION BEYOND: THE AMYLOID AGGREGATION EXPERIMENT ON BOARD THE INTERNATIONAL SPACE STATION
Cristina Casalone, Italy

IAC-19.A2.6.10
MISSION BEYOND: THE UTISS TEAM TO SUPPORT THE ITALIAN EXPERIMENTS FOR THE INTERNATIONAL SPACE STATION
Valerio Di Tana, Argotec, Italy

IAC-19.A2.6.11
NANORACKS LEO COMMERCIALIZATION STUDY: EXPERIENCES AND OUTCOMES
Adrian Mangiuca, Nanoracks, United States

A2.7. Life and Physical Sciences under reduced Gravity

October 25 2019, 13:30 — 143C

Co-Chair(s): Satoshi Matsumoto, Japan Aerospace Exploration Agency (JAXA), Japan; Angelika Diefenbach, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Jancy McPhee, The Aerospace Corporation, United States; Peter Graef, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-19.A2.7.1
EXPLOITING THE POTENTIAL OF COMMERCIAL FLIGHT-PROVEN HARDWARE FOR BIOLOGICAL EXPERIMENTATION IN SPACE.
Michele Balsamo, Kayser Italia Srl, Italy

IAC-19.A2.7.2
SPACE LIFE SCIENCE INSTRUMENTS AND EXPERIMENTAL TECHNOLOGIES IN CHINA
Zhang Tao, Shanghai Institute of Technical Physics, Chinese Academy of Sciences (CAS), China

IAC-19.A2.7.3
THE INTERNATIONAL SPACE STATION U.S. NATIONAL LAB – TISSUE ENGINEERING AND REGENERATIVE MEDICINE
Marc Giulianotti, International Space Station (ISS) U.S. National Laboratory, United States

IAC-19.A2.7.4
BIOFABRICATION FACILITY, TISSUE PRINTING ON THE INTERNATIONAL SPACE STATION
Eugene Boland, Techshot, Inc., United States

IAC-19.A2.7.5
TISSUE CHIPS IN SPACE
Marc Giulianotti, International Space Station (ISS) U.S. National Laboratory, United States

IAC-19.A2.7.6
ON-CHIP CELL-CULTURE SUPPORT AND MONITORING DEVICE WITH INTEGRATED THIN-FILM SENSORS AND ACTUATORS
Lorenzo Iannascoli, Sapienza University of Rome, Italy

IAC-19.A2.7.7
EFFECTS OF MICROGRAVITY ON STEM CELL ENGRAFTMENT, PROLIFERATION, AND DIFFERENTIATION THROUGH THE GROUND BASED RPM EXPERIMENTS
Seokhwan Yun, Korea Polytechnic University, Korea, Republic of

IAC-19.A2.7.8
GENOTYPING, PHYLOGENY, AND GENE EXPRESSION MEASUREMENT MODULE - THE DOOR TO HIGH-THROUGHPUT IN-SITU ANALYSES OF CLINICAL AND BIOLOGICAL SAMPLES IN SPACE.
Fathi Karouia, National Aeronautics and Space Administration (NASA), Ames Research Center / UCSF, United States

IAC-19.A2.7.9
EXPERIMENT DESIGN FOR A GENOME-WIDE YEAST FITNESS PROFILING EXPERIMENT ON BOARD ORION'S ARTEMIS 1 MISSION
Luis Zea, University of Colorado Boulder, United States

IAC-19.A2.7.10
SEARCH FOR PROTEINS OF BLOOD PROTEOME - REGULATORS OF BONE REMODELING IN COSMONAUTS
Liudmila Pastushkova, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

IAC-19.A2.7.11
THE COENZYME Q10 (COQ10) AS COUNTERMEASURE FOR RETINAL DAMAGE ONBOARD THE INTERNATIONAL SPACE STATION: THE CORM PROJECT
Matteo Lulli, University of Firenze, Italy

IAC-19.A2.7.12
CUBESAT BIOLAB – INVESTIGATION OF RADIATION INFLUENCE TO BACTERIA IN MEO
Gleb Lavrinov, Skoltech Space Center, Russian Federation

IAC-19.A2.7.13
INTRODUCTION OF ACCESSIBILITY AND NEW INNOVATIVE TECHNOLOGIES AND SOLUTIONS FOR SUPPORTING HUMAN LIFE ON THE INTERNATIONAL SPACE STATION
Ashwini Sathnur, India

IAC-19.A2.7.14
EXAMINATION OF MOLECULAR MECHANISMS ON VASCULAR FORMATION AND STRESS RESPONSE IN ZEBRAFISH BY DIFFERENT MICROGRAVITY ENVIRONMENTS
Pedro Llanos, Embry-Riddle Aeronautical University, United States

IAC-19.A2.7.15
RODENT RESEARCH REFERENCE MISSIONS ON THE ISS NATIONAL LAB
Michael Roberts, International Space Station (ISS) U.S. National Laboratory, United States

IAC-19.A2.7.16
UTILITY OF HEALTH WEARABLES FOR ASTRONAUT MEDICAL SUPPORT: IMPLICATIONS FOR FUTURE DEEP SPACE MISSIONS
Scott Ritter, International Space University, France

A2.IP. Interactive Presentations - IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Gabriel Pont, Centre National d'Etudes Spatiales (CNES), France; Qi Kang, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., China;

IAC-19.A2.IP.1
OPTIMAL DEPLOYMENT SIMULATION FOR VARIOUS GRAVITATIONAL WAVE MISSIONS
An-Ming Wu, National Space Organization, Taipei

IAC-19.A2.IP.2 (non-confirmed)
MATHEMATICAL MODELING AND NUMERICAL SIMULATION OF MULTIPHASE MEDIA MOTIONS IN MICROGRAVITY CONDITIONS
Dmytro Yevdokymov, Oles Honchar Dnipropetrovsk National University, Ukraine

IAC-19.A2.IP.3
MATHEMATICAL ANALYSIS ON THE SIMULATED MICROGRAVITY RESULTING FROM THE RANDOM POSITIONING MACHINE
Taig Young Kim, Korea Polytechnic University, Korea, Republic of

IAC-19.A2.IP.4 (withdrawn)
MECHANICAL SIMULATION OF CLAMPING CAPTURE SPACECRAFT FOR DUAL-ARM SPACE ROBOT AND PASSIVITY-BASED FORCE/POSITION NEURAL NETWORK H-INFINITY ROBUST CONTROL
Haiping Ai, Fuzhou University, China

IAC-19.A2.IP.5 (withdrawn)
AN ANALOG MARS MISSION TO EXPERIMENT AND DEVELOP NEW TECHNIQUES FOR MANNED MISSIONS
Mamatha Maheshwarappa, RAL Space, United Kingdom

IAC-19.A2.IP.6
DESIGN, CALIBRATION AND EXPERIMENTATION WITH SEEDS IN A RPM
Pablo Serralta, LEEM - Laboratory for Space and Microgravity Research, Spain

IAC-19.A2.IP.7
ENDOTHELIAL CELL CULTURING IN A RANDOM POSITIONING MACHINE WITH A CULTURE CHAMBER
HEERAK KIM, Korea Polytechnic University, Korea, Republic of

A3. IAF SPACE EXPLORATION SYMPOSIUM

Coordinator(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Bernard Foing, ESA/ESTEC, ILEWG & VU Amsterdam, The Netherlands;

A3.1. Space Exploration Overview

October 21 2019, 15:00 — 146B

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Kathy Laurini, United States;
Rapporteur(s): Keyur Patel, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Norbert Frischauf, TU Graz, Austria;

IAC-19.A3.1.1
KEYNOTE: NASA SCIENCE UNDER THE NATIONAL SPACE EXPLORATION CAMPAIGN
Green James, National Aeronautics and Space Administration (NASA), United States

IAC-19.A3.1.2
NASA'S HUMAN LUNAR EXPLORATION ENTERPRISE: DEVELOPING A DEEP SPACE INFRASTRUCTURE AND ESTABLISHING A SUSTAINABLE HUMAN PRESENCE ON THE MOON
R. Marshall Smith, National Aeronautics and Space Administration (NASA), United States

IAC-19.A3.1.3
THE CANADIAN LUNAR INITIATIVE: GATEWAY ROBOTICS AND LEAP
Christian Lange, Canadian Space Agency, Canada

IAC-19.A3.1.4
"BOOTS ON THE MOON" THE KEY TO SUSTAINED EXPLORATION CAMPAIGN
Walter Faulconer, United States

IAC-19.A3.1.5
GLOBAL PROSPECTS FOR SPACE EXPLORATION: \\A STRATEGIC AND ECONOMIC ASSESSMENT
Natalia Larrea Brito, Euroconsult, Canada

IAC-19.A3.1.6
ROBOTIC LUNAR SURFACE OPERATIONS 2
Alex Austin, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.A3.1.7
CONSIDERATIONS TO FOSTER INCLUSIVENESS IN FUTURE CISLUNAR SPACE ENDEAVORS
Laura Bettiol, Space Generation Advisory Council (SGAC), Italy

IAC-19.A3.1.8
NOVEL OPERATIONAL CONCEPTS TO ENABLE COMMERCIAL SPACE EXPLORATION
Alvaro Alonso Ruiz, Telespazio VEGA Deutschland GmbH, Germany

IAC-19.A3.1.9
ELEMENTS OF HABITABILITY AND ITS RELATIONS TO SPATIAL DESIGN – A CONCEPT ANALYSIS
Sandra Haeuplik-Meusburger, Vienna University of Technology, Austria

A3.2A. Moon Exploration – Part 1

October 22 2019, 09:45 — 146B

Co-Chair(s): Bernard Foing, ESA/ESTEC, ILEWG & VU Amsterdam, The Netherlands; David Korsmeyer, National Aeronautics and Space Administration (NASA), Ames Research Center, United States;
Rapporteur(s): Pierre-Alexis Joumel, Airbus Defence and Space, Germany; Nadeem Ghafoor, Canadensys Aerospace Corporation, Canada;

IAC-19.A3.2A.1 (non-confirmed)
KEYNOTE: AN OVERVIEW OF NASA'S LUNAR SCIENCE EXPLORATION PLANS FOR ARTEMIS
Steve Clarke, National Aeronautics and Space Administration (NASA), United States

IAC-19.A3.2A.2
OVERVIEW OF THE ISRAELI LUNAR LANDER
Ehud Hayun, Israel Aerospace Industries Ltd., Israel

IAC-19.A3.2A.3
LOCKHEED MARTIN MCCANDLESS LUNAR LANDER CAPABILITIES FOR COMMERCIAL LUNAR PAYLOADS
Josh Hopkins, Lockheed Martin Corporation, United States

IAC-19.A3.2A.4
ALINA-2: INNOVATIONS ON PTSCIENTISTS' COMMERCIAL LUNAR LANDER
Marcel Scherrmann, Planetary Transportation Systems GmbH (PTS), Germany

IAC-19.A3.2A.5
DEVELOPMENT PROGRESS OF THE FIRST ISPACE PRIVATE LUNAR EXPLORATION MISSION
Chit Hong Yam, ispace, Inc, Japan

IAC-19.A3.2A.6
CURRENT STATUS OF JAPANESE LUNAR POLAR EXPLORATION MISSION
Takeshi Hoshino, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A3.2A.7
MOON EXPLORATION: A PRIVATE VIEW OF A PUBLIC-PRIVATE PARTNERSHIP
David Masten, Masten Space Systems, United States

IAC-19.A3.2A.8
COLMENA MISSION TO THE MOON
Gustavo Medina Tanco, Universidad Nacional Autónoma de México (UNAM), Mexico

IAC-19.A3.2A.9
POTENTIAL RUSSIAN LANDING AND TAKEOFF ROBOTIC SPACECRAFT USAGE SCENARIOS TO SUPPORT FUTURE MANNED MISSIONS TO THE MOON
Konstantin Raykunov, Central Research Institute for Machine Building (FGUP TSNIIMASH), Russian Federation

IAC-19.A3.2A.10
KOREAN LUNAR EXPLORATION PROGRAM STATUS UPDATE
Gwanghyeok Ju, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.A3.2A.11
LUNAR SURFACE ACCESS SERVICE (LSAS) -- THE OHB-IAI COLLABORATION ON COMMERCIAL LUNAR LANDERS
Lutz Richter, OHB System AG - Munich, Germany

A3.2B. Moon Exploration – Part 2

October 22 2019, 14:45 — 146B

Co-Chair(s): Bernard Foing, ESA/ESTEC, ILEWG & VU Amsterdam, The Netherlands; David Korsmeyer, National Aeronautics and Space Administration (NASA), Ames Research Center, United States;
Rapporteur(s): Pierre-Alexis Joumel, Airbus Defence and Space, Germany; Nadeem Ghafoor, Canadensys Aerospace Corporation, Canada;

IAC-19.A3.2B.1
FIRST IN FLIGHT RESULTS OF THE NCLE INSTRUMENT - A LOW FREQUENCY RADIO RECEIVER EXPLORING THE DARK AGES IN LUNAR ORBIT
Eric Bertels, ISIS - Innovative Solutions In Space B.V., The Netherlands

IAC-19.A3.2B.2
LASER VELOCITY AND ALTITUDE SENSOR TECHNOLOGY FOR LUNAR ROBOTIC AND HUMAN LANDING SYSTEMS
Glenn Hines, National Aeronautics and Space Administration (NASA), United States

IAC-19.A3.2B.3
TAIWANESE FIRST MOON EXPLORATION MISSION
Shin-Fa Lin, National Space Organization, Taiwan, China

IAC-19.A3.2B.4
CANADA AND NEW LUNAR EXPLORATION
Nadeem Ghafoor, Canadensys Aerospace Corporation, Canada

IAC-19.A3.2B.5
ISPACE MODULAR LUNAR ROVER DESIGN
John Walker, ispace, Inc, Japan

IAC-19.A3.2B.6
LUNAR "VOLATILE AND MINERALOGY MAPPING ORBITER (VMMO)" MISSION
Yang Gao, Surrey Space Centre, University of Surrey, United Kingdom

IAC-19.A3.2B.7 (withdrawn)
DEVELOPMENT STATUS OF CUBESAT MOON LANDER OMOTENASHI
Tatsuaki Hashimoto, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A3.2B.8
A LIGHT-WEIGHT ROVER PROTOTYPE WITH MECHANISM TO SECURE RELIABLE ACTUATION FOR A LONG-TERM LUNAR EXPLORATION
Mingyo Seo, Korea, Republic of

IAC-19.A3.2B.9 (withdrawn)
STATUS OF ROVER SYSTEM STUDY FOR JAPANESE LUNAR POLAR EXPLORATION MISSION
Sachiko Wakabayashi, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A3.2B.10
NASA'S SOLAR SYSTEM EXPLORATION RESEARCH VIRTUAL INSTITUTE: MERGING SCIENCE AND EXPLORATION ON THE MOON
Brad Bailey, NASA, United States

IAC-19.A3.2B.11
KOREA PATHFINDER LUUNAR ORBITER (KPLO): UPDATE ON THE COLLABORATIVE KARI/NASA MISSION
Seok Weon Choi, Korea Aerospace Research Institute (KARI), Korea, Republic of

A3.2C. Moon Exploration – Part 3

October 25 2019, 09:45 — 146B

Co-Chair(s): Bernard Foing, ESA/ESTEC, ILEWG & VU Amsterdam, The Netherlands; David Korsmeyer, National Aeronautics and Space Administration (NASA), Ames Research Center, United States;
Rapporteur(s): Sylvie Espinasse, European Space Agency (ESA), The Netherlands; Nadeem Ghafoor, Canadensys Aerospace Corporation, Canada;

IAC-19.A3.2C.1
THE INTERNATIONAL LUNAR DECADE: A FRAMEWORK FOR MULTINATIONAL COLLABORATION IN LUNAR EXPLORATION AND DEVELOPMENT
Jim Crisafulli, National Space Society, United States

IAC-19.A3.2C.2
4 MOON MISSIONS: ILOA LOOKING FORWARD 2020 / OCTOBER 2019 UPDATE
Steve Durst, International Lunar Observatory Association, United States

IAC-19.A3.2C.3
LUNAR ANALOGUE FACILITIES DEVELOPMENT AT EAC: STATUS OF THE LUNA AND FLEXHAB PROJECTS
Aidan Cowley, ESA, Germany

IAC-19.A3.2C.4
MODELING LONG TERM DEPOSITION OF ICE IN LUNAR PERMANENTLY SHADOWED REGIONS (PSRS) FOR THE PURPOSES OF RESOURCE PROSPECTING
David Dickson, Colorado School of Mines, United States

IAC-19.A3.2C.5
LUNAR NAVIGATION BEACON NETWORK USING GLOBAL NAVIGATION SATELLITE SYSTEM RECEIVERS
Evan Anzalone, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, United States

IAC-19.A3.2C.6
LUNAR VOLATILES MOBILE INSTRUMENTATION (LUVMI) PROJECT'S RESULTS
Jeremi Gancet, Space Applications Services N.V./S.A., Belgium

IAC-19.A3.2C.7
A CANADIAN SCIENCE MATURATION STUDY FOR A LUNAR SAMPLE RETURN ROVER TO SCHRÖDINGER BASIN AS PART OF THE HERACLES MISSION CONCEPT
Gordon Osinski, University of Western Ontario (UWO), Canada

IAC-19.A3.2C.8
DEVELOPMENT OF KEY TECHNOLOGIES ENABLING THE VALUE CHAIN OF SPACE RESOURCES UTILISATION
Diego A. Urbina, Space Applications Services N.V./S.A, Belgium

IAC-19.A3.2C.9
EUROMOONMARS IMA HI-SEAS 2019 CAMPAIGN: AN ENGINEERING PERSPECTIVE ON A MOON BASE
Nityaporn Sirikan, European Space Agency (ESA), The Netherlands

IAC-19.A3.2C.10
MALAPERT MOUNTAIN: AN IDEAL STAGING POINT FOR LUNAR SOUTH POLE EXPLORATION
Lukas Steindorf, Planetary Transportation Systems GmbH (PTS), Germany

IAC-19.A3.2C.11
HOW TO LIVE SUSTAINABLY ON THE MOON
Henk Rogers, International MoonBase Alliance, United States

A3.3A. Mars Exploration – missions current and future

October 23 2019, 09:45 — 146B

Co-Chair(s): Vincenzo Giorgio, Thales Alenia Space Italia, Italy; Pierre W. Bousquet, Centre National d'Etudes Spatiales (CNES), France;

Rapporteur(s): Cheryl Reed, Northrop Grumman Innovation Systems, United States; Amalia Ercoli Finzi, Politecnico di Milano, Italy;

IAC-19.A3.3A.1
KEYNOTE: MARS SAMPLE RETURN MISSION CONCEPT STATUS
Brian Muirhead, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.A3.3A.2
POTENTIAL EUROPEAN CONTRIBUTIONS TO THE INTERNATIONAL MARS SAMPLE RETURN CAMPAIGN
Federico Massobrio, Thales Alenia Space, Italy

IAC-19.A3.3A.3
THE MULTI-MISSION EARTH ENTRY VEHICLE - PAST, PRESENT, AND FUTURE
James Corliss, National Aeronautics and Space Administration (NASA), United States

IAC-19.A3.3A.4 (non-confirmed)
STATUS OF NASA'S INSIGHT MARS MISSION INSIGHT: [INTERIOR EXPLORATION USING SEISMIC INVESTIGATIONS, GEODESY AND HEAT TRANSPORT]
Ramon P. De Paula, National Aeronautics and Space Administration (NASA), United States

IAC-19.A3.3A.5
SEIS ON MARS
Gabriel Pont, Centre National d'Etudes Spatiales (CNES), France

IAC-19.A3.3A.6
THE EXOMARS 2020 ROVER: AN OVERLOOK TO ITS DESIGN, TECHNOLOGY AND AMBITIOUS OBJECTIVES
Pietro Baglioni, ESA - European Space Agency, The Netherlands

IAC-19.A3.3A.7
EXOMARS ROVER & SURFACE PLATFORM MISSION: APPROACHING THE LAUNCH CAMPAIGN
Bruno Musetti, Thales Alenia Space Italia, Italy

IAC-19.A3.3A.8
EMIRATES MARS MISSION (EMM) COMMAND AND DATA HANDLING DESIGN OVERVIEW
Hessa Ali, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-19.A3.3A.9
OPERATION OF NASA'S SCIENCE AND TELECOMMUNICATIONS NETWORK AT MARS
David Murrow, Lockheed Martin (Space Systems Company), United States

IAC-19.A3.3A.10
COMPARATIVE PLANETOLOGY OF MARTIAN IONOSPHERE
Noora Alameri, Sharjah Center for Astronomy and Space Sciences (SCASS), United Arab Emirates

IAC-19.A3.3A.11
INPPS FLAGSHIP: 2020TH AND 2030TH MARS EXPLORATIONS
Frank Jansen, DLR (German Aerospace Center), Germany

A3.3B. Mars Exploration – Science, Instruments and Technologies

October 23 2019, 14:45 — 146B

Co-Chair(s): Vincenzo Giorgio, Thales Alenia Space Italia, Italy; Pierre W. Bousquet, Centre National d'Etudes Spatiales (CNES), France;
Rapporteur(s): Cheryl Reed, Northrop Grumman Innovation Systems, United States; Amalia Ercoli Finzi, Politecnico di Milano, Italy;

IAC-19.A3.3B.1 (withdrawn)
DESIGN AND OPTIMIZATION OF HYBRID DRONE FOR MARS EXPLORATION
Rebecca Sappington, New Mexico Tech, United States

IAC-19.A3.3B.2
MARAV - CONCEPTUAL DESIGN OF SOLAR POWERED MARTIAN AERIAL VEHICLE
Siddhesh Naik, India

IAC-19.A3.3B.3
A HYBRID SYSTEM ARCHITECTURE THAT COMBINES A CENTRALIZED ROVER WITH A FLYING SWARM OF ROTARY WINGED DRONES FOR MARS EXPLORATION
Ahmed Mashood, United Arab Emirates

IAC-19.A3.3B.4
RESOURCE CONSTRAINED ONBOARD PLANNING FOR MARS ROVERS
Hao Jin, Beijing Institute of Technology, China

IAC-19.A3.3B.5 (withdrawn)
NOVEL AUTONOMOUS MARS ROVERS OPTIMAL GUIDANCE APPROACH BASED ON NATURE PHENOMENON OF BEE ALGORITHM IN CO-OPERATIVE FORMATION
Javad Shams, K. N. Toosi University of Technology, Iran

IAC-19.A3.3B.6 (withdrawn)
APPLICATION OF PNEUMATICS TO DRILLING, EXCAVATION, SAMPLE ACQUISITION AND TRANSFER ON PLANETARY MISSIONS
Kris Zacny, Honeybee Robotics, United States

IAC-19.A3.3B.7
ROBOTIC ARMS FOR MARS SAMPLE RETRIEVAL
Alessandro Chierici, Leonardo Spa, Italy

IAC-19.A3.3B.8
MSR RENDEZVOUS AND CAPTURE PHASE: THE GNC SUBSYSTEM SOLUTION AND A SNAPSHOT OVER THE IMAGE PROCESSING ALGORITHMS AND NARROW ANGLE CAMERA ELEGANT BREADBOARD
Luigi Strippoli, GMV Aerospace & Defence SAU, Spain

IAC-19.A3.3B.9 (withdrawn)
AIRBUS DS VISION BASED NAVIGATION SOLUTIONS FOR THE MARS SAMPLE RETURN – EARTH RETURN ORBITER MISSION
Aurore MASSON, Airbus Defense and Space, France

IAC-19.A3.3B.10 (withdrawn)
MOXIE COMPOSITION SENSORS CALIBRATION AND CHARACTERIZATION
Maya Nasr, Massachusetts Institute of Technology (MIT), United States

IAC-19.A3.3B.11
CHARACTERIZATION OF THE RAMAN LASER SPECTROMETER (RLS) FLIGHT MODEL FOR THE ESA'S EXOMARS 2020 MISSION
Andoni G. Moral, National Institute for Aerospace Technology (INTA), Spain

IAC-19.A3.3B.12
A COMBINED RAMAN, LIF, AND MICRO-LIBS SYSTEM WITH TIME-RESOLVED FLUORESCENCE CAPABILITIES FOR PLANETARY EXPLORATION APPLICATIONS
Kristen Cote, University of Toronto, Canada

IAC-19.A3.3B.13
DESIGN CONSIDERATIONS AND DEVELOPMENT STATUS FOR ATMOSPHERIC POWERED DESCENT OF HIGH-MASS PAYLOADS AT MARS
Ashley Korzun, National Aeronautics and Space Administration (NASA), Langley Research Center, United States

A3.4A. Small Bodies Missions and Technologies (Part 1)

October 24 2019, 09:45 — 146B

Co-Chair(s): Susan McKenna-Lawlor, Space Technology (Ireland) Ltd., Ireland; Stephan Ulamec, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;
Rapporteur(s): Norbert Frischauf, TU Graz, Austria; Marc D. Rayman, NASA Jet Propulsion Laboratory, United States;

IAC-19.A3.4A.1
THE SUCCESSFUL CONCLUSION OF THE DAWN MISSION: IMPORTANT RESULTS WITHOUT A FLASHY TITLE
Marc D. Rayman, NASA Jet Propulsion Laboratory, United States

IAC-19.A3.4A.2
HAYABUAS2 MISSION STATUS: LANDING, ROVING AND CRATERING ON ASTEROID RYUGU
Yuichi Tsuda, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A3.4A.3
OPERATION PLANNING AND RESULTS OF HAYABUSA2'S FIRST ASTEROID TOUCHDOWN
Yuto Takei, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A3.4A.4
OPERATION RESULTS OF MINERVA-II TWIN ROVERS ONBOARD HAYABUSA2 ASTEROID EXPLORER
Tetsuo Yoshimitsu, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

IAC-19.A3.4A.5
OPERATION PLANNING AND RESULTS OF IMPACT EXPERIMENT OF HAYABUSA2
Takanao Saiki, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A3.4A.6
THE LANDING AND IN-SITU OBSERVATION OF (162173) RYUGU BY THE MASCOT LANDER
Tra Mi Ho, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Institute of Space Systems, Germany

IAC-19.A3.4A.7
IMPLICATIONS OF THE GRAVITY AND GEOPHYSICAL ENVIRONMENT OF (101955) BENNU FOR NEA EXPLORATION
Daniel Scheeres, Colorado Center for Astrodynamics Research, University of Colorado, United States

IAC-19.A3.4A.8
DART: DOUBLE ASTEROID REDIRECTION TEST
Cheryl Reed, Northrop Grumman Innovation Systems, United States

IAC-19.A3.4A.9
HERA MISSION TO ASTEROID DIDYMOS: ESA CONTRIBUTION TO THE AIDA INTERNATIONAL COLLABORATION
Ian Carnelli, European Space Agency (ESA), France

A3.4B. Small Bodies Missions and Technologies (Part 2)

October 25 2019, 13:30 — 146B

Co-Chair(s): Stephan Ulamec, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Susan McKenna-Lawlor, Space Technology (Ireland) Ltd., Ireland;
Rapporteur(s): Marc D. Rayman, NASA Jet Propulsion Laboratory, United States; Norbert Frischauf, TU Graz, Austria;

IAC-19.A3.4B.1
REPORT ON HAYABUSA2 TOUCH-DOWN DYNAMICS AND SAMPLING OPERATION RESULT
Hirotaka Sawada, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A3.4B.2
MASCOT OPERATIONS ON RYUGU – FOCUS ON SPECIFIC TASKS
Christian Krause, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.A3.4B.3
ANALYSIS AND DESIGN OF A PROPULSION MODULE FOR SMALL BODY NANOLANDER AND SURFACE SCIENCE PACKAGES BASED ON THE MASCOT LANDER CONCEPT
Caroline Lange, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.A3.4B.4
ONE-SHOT DEPTH IMAGING FOR SMALL BODY LANDING MISSIONS WITH A SINGLE PLENOPTIC CAMERA
Martin Lingenauber, DLR, German Aerospace Center, Germany

IAC-19.A3.4B.5
THE SCIENCE RETURN OF THE ESA HERA MISSION: THE EUROPEAN COMPONENT OF THE AIDA PROJECT IN COOPERATION WITH NASA DART
Patrick Michel, University of Nice-Sophia Antipolis, CNRS, Observatoire de la Cote d'Azur, France

IAC-19.A3.4B.6
JUVENTAS: EXPLORATION OF A BINARY ASTEROID SYSTEM WITH A CUBESAT
Ozgur Karatekin, Royal Observatory of Belgium, Belgium

IAC-19.A3.4B.7
MISSION DEFINITION OF MARTIAN MOONS EXPLORATION (MMX)
Yasuhiro Kawakatsu, Japan Aerospace Exploration Agency (JAXA), ISAS, Japan

IAC-19.A3.4B.8
A ROVER FOR THE MMX MISSION TO PHOBOS
Stephan Ulamec, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.A3.4B.9
THE RAMAN SPECTROMETER ONBOARD THE MMX ROVER FOR PHOBOS
Till Hagelschuer, German Aerospace Center (DLR), Berlin, Germany

IAC-19.A3.4B.10
CHARACTERISATION OF A POTENTIALLY THREATENING NEO
Pierre W. Bousquet, Centre National d'Etudes Spatiales (CNES), France

A3.5. Solar System Exploration including Ocean Worlds

October 24 2019, 14:45 — 146B

Co-Chair(s): Mariella Graziano, GMV Aerospace & Defence SAU, Spain; Junichiro Kawaguchi, Japan Aerospace Exploration Agency (JAXA), Japan;
Rapporteur(s): Charles E. Cockrell Jr., National Aeronautics and Space Administration (NASA), United States; Alain Ouellet, Canadian Space Agency, Canada;

IAC-19.A3.5.1
KEYNOTE: EXECUTION OF PARKER SOLAR PROBE'S UNPRECEDENTED FLIGHT TO THE SUN AND EARLY RESULTS
Yanping Guo, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.A3.5.2
BEPICOLOMBO MISSION TO MERCURY: FIRST YEAR OF FLIGHT
Christoph Steiger, European Space Agency (ESA), Germany

IAC-19.A3.5.3
THE SOLAR ORBITER MISSION: THE SUN UP CLOSE
Anne Pacros, ESA - European Space Agency, The Netherlands

IAC-19.A3.5.4
JUICE PLANETARY PROTECTION ANALYSIS
Pablo Hermosin, Deimos Space SLU, Spain

IAC-19.A3.5.5 (withdrawn)
DEVELOPMENT OF PROBE TECHNOLOGIES TO REACH EUROPA OCEAN
Kris Zacny, Honeybee Robotics, United States

IAC-19.A3.5.6
TARGETING ENCELADUS' GEYSER VENTS USING PENETRATORS EMPLOYING BIOMIMETIC PLUME SNIFFING
Yue Sun, School of Astronautics, Harbin Institute of Technology, China

IAC-19.A3.5.7
MISSIONS TO TRITON AND PLUTO
Geoffrey Landis, NASA Glenn Research Center, United States

IAC-19.A3.5.8
FRACTAL DIMENSIONAL ANALYSIS FOR QUANTITATIVE CHARACTERIZATION STUDY OF THE IRREGULARITY IN TITAN HYDROCARBON LAKES/SEAS AND TOPOGRAPHY OF NEAR SURFACE/REGION.
Rinkesh Kurkure, India

A3.IP. Interactive Presentations - IAF SPACE EXPLORATION SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Bernard Foing, ESA/ESTEC, ILEWG & VU Amsterdam, The Netherlands;

IAC-19.A3.IP.1
LUNAR LANDING-AND-TAKEOFF VEHICLE
Olexandr Kashanov, Yuzhnoye State Design Office, Ukraine

IAC-19.A3.IP.2 (withdrawn)
STUDY OF PREFABRICATED COMPOSITE LAYER AS A TEMPERATURE AND IMPACT SHIELD FOR LUNAR HABITATS
Jeffrey Steiner, University of Connecticut, United States

IAC-19.A3.IP.3
THE PRIMARY LOCATIONS AND SETTLEMENT STRATEGIES OF INTEREST FOR FUTURE LUNAR BASES
Xiaochen Zhang, University of Western Ontario (UWO), Canada

IAC-19.A3.IP.4
HAWAIIAN BASALT CHARACTERIZATION AND THE EFFECTS OF CHEMICAL COMPOSITION VARIANCES ON THE SINTERING PROCESS; POTENTIAL IMPLICATIONS FOR LUNAR/MARS ISRU APPLICATIONS.
Kyla Defore, United States

IAC-19.A3.IP.5
IMPLEMENTATION OF LOW-POWER, WIDEBAND SYNTHETIC APERTURE RADAR FOR PRIMITIVE BODY RECONNAISSANCE APPLICATIONS
Katelyn Kufahl, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.A3.IP.6
INTERACTIVE PLANETARY VISUALIZATION AND ANALYSIS WITH NASA'S SOLAR SYSTEM TREKS PORTALS
Emily Law, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.A3.IP.7
THE USC ADAM PROJECT: ADVANCED DEVELOPMENTAL ARCHITECTURES FOR OUR MOON
Madhu Thangavelu, University of Southern California, United States

IAC-19.A3.IP.8
REGOLITH MINING IN SHACKLETON CRATER: PROPELLANT, BUILDING MATERIALS AND VITAL RESOURCES PRODUCTION FOR A LONG DURATION MANNED MISSION
Lorenzo Rabagliati, International Master SEEDS, Italy

IAC-19.A3.IP.9 (withdrawn)
ROVER PERFORMANCE BOUNDARY ASSESSMENT USING TERRAIN MAP TRAVERSABILITY ANALYSIS
Niti Madhugiri, Team Indus, Axiom Research Labs Pvt. Ltd., India

IAC-19.A3.IP.10
MATERIAL CHARACTERIZATION WHILE DRILLING ON MOON:RESULTS OF THE ATMOSPHERIC DRILLING TESTS
Deep Joshi, Colorado School of Mines, United States

IAC-19.A3.IP.11
LUNAR EXCAVATOR: REGOLITH MINING OPERATIONS TESTING
Jason Schuler, National Aeronautics and Space Administration (NASA), United States

IAC-19.A3.IP.12
MISSION CONCEPT FOR LUNAR LOW FREQUENCY ANTENNAS FOR RADIO ASTRONOMY (LUFAR)
Maneesh Kumar Verma, Delft University of Technology (TU Delft), The Netherlands, The Netherlands

IAC-19.A3.IP.13
PLEXNET - A DISTRIBUTED, VARIABLE-AUTONOMY ARCHITECTURE FOR EXPLORATION OF PLANETARY BODIES
Zhong Thai, Purdue University, United States

IAC-19.A3.IP.14
JUMP ROBOT WITH TETHER FOR LUNAR VERTICAL HOLE EXPLORATION
Karin Kushida, Aoyama Gakuin University, Japan

IAC-19.A3.IP.15
FROM DUST TO GAS, LEAP2 TECHNOLOGIES FOR LUNAR SITE DEVELOPMENT AT THE MARIUS HILLS SKYLIGHT
Samuel Ximenes, WEX Foundation, United States

IAC-19.A3.IP.16
THE GLACIER PROJECT IN THE IGLUNA ESA LAB DEMONSTRATOR PROJECT
Julia Jwajoras, Students Space Association, Warsaw University of Technology, Poland

IAC-19.A3.IP.17
ICELAND CAMPAIGNS FOR EXPLORATION OF LAVA CAVES AND EXTRAPOLATION TO A SEMI-PERMANENT LUNAR HABITAT
Marjolein Daeter, Vrije Universiteit Amsterdam, The Netherlands

IAC-19.A3.IP.18
LUNAR ORBITAL PLATFORM-GATEWAY (LOP-G) AS AN OPPORTUNITY TO TEST TECHNOLOGIES APPLICABLE TO THE ROBOTIC AND CREWED EXPLORATION OF BOTH MOON AND MARS
Anne-Marlene Rüede, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

IAC-19.A3.IP.19
CISLUNAR AUTONOMOUS NAVIGATION USING MULTI-GNSS AND GNSS-LIKE AUGMENTATIONS: CAPABILITIES AND BENEFITS
Caitlyn Singam, University of Maryland - College Park, United States

IAC-19.A3.IP.20
IN-SITU RESOURCES UTILISATION (ISRU): USING SWARM ROBOTICS TO OPTIMISE THIS KEY TECHNOLOGY FOR FUTURE SUSTAINABLE LUNAR EXPLORATION
André Fonseca Prince, ISU, Italy

IAC-19.A3.IP.21
SETTING UP AN EARTH MOON GONDOLA FROM THE MOON VILLAGE
Jean-Yves Prado, PLATINEO, France

IAC-19.A3.IP.22
DEVELOPMENT AND TEST OF A FOLDABLE PROTECTION SYSTEM FOR A SMALL LANDING PROBE USING 3D-PRINTED METAL GRIDS AS SHOCK ABSORBER
Silvio Schröder, German Aerospace Center (DLR), Bremen, Germany

A4. 48th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps

Coordinator(s): Claudio Maccone, International Academy of Astronautics (IAA) and Istituto Nazionale di Astrofisica (INAF), Italy;

A4.1. SETI 1: SETI Science and Technology

October 22 2019, 09:45 — 143C

Co-Chair(s): Michael Albert Garrett, University of Manchester, United Kingdom; Bill Diamond, SETI Institute, United States;
Rapporteur(s): Andrew Siemion, Univerisity of California, United States;

IAC-19.A4.1.1
NEW LIMITS ON THE PRESENCE OF TECHNOLOGICAL CIVILIZATIONS IN THE UNIVERSE FROM BREAKTHROUGH LISTEN
Andrew Siemion, Univerisity of California, United States

IAC-19.A4.1.2
BREAKTHROUGH LISTEN ON THE MURCHISON WIDEFIELD ARRAY
Steve Croft, University California Berkeley, United States

IAC-19.A4.1.3
ON THE BREAKTHROUGH LISTEN SEARCH FOR SIGNS OF INTELLIGENT LIFE NEAR THE GALACTIC CENTER
Vishal Gajjar, University of California, Berkeley, United States

IAC-19.A4.1.4
THE BREAKTHROUGH LISTEN SEARCH FOR INTELLIGENT LIFE: PUBLIC DATA, FORMATS, REDUCTION AND ARCHIVING
Matt Lebofsky, U.C. Berkeley, United States

IAC-19.A4.1.5
OPPORTUNITIES FOR RADIO TECHNOSIGNATURE SEARCHES WITH THE ALLEN TELESCOPE ARRAY AND VERY LARGE ARRAY
Andrew Siemion, Univerisity of California, United States

IAC-19.A4.1.6
TOWARDS A UK SETI CAPABILITY WITH E-MERLIN/EVN
Mike Garrett, University of Manchester, United Kingdom

IAC-19.A4.1.7
INVOLVEMENT OF THE SARDINIA RADIO TELESCOPE IN THE BREAKTHROUGH LISTEN INITIATIVES: FIRST RESULTS AND ONGOING ACTIVITIES
Andrea Melis, INAF - Istituto Nazionale di AstroFisica, Italy

IAC-19.A4.1.8
SEARCHING FOR LOW FREQUENCY OPTICAL SETI SIGNALS BURIED IN ATMOSPHERIC SCINTILLATION
Richard Stanton, Jet Propulsion Laboratory, United States

IAC-19.A4.1.9
TIME MARKERS FOR SETI IN BINARY SYSTEMS
Jacob Haqq-Misra, Blue Marble Space Institute of Science, United States

IAC-19.A4.1.10
THE TRILLION PLANET SURVEY THE SEARCH FOR DIRECTED INTELLIGENCE AND IMPLICATIONS OF DIRECTED ENERGY FOR SETI PHILIP LUBIN PHYSICS DEPARTMENT, UNIVERSITY OF CALIFORNIA, SANTA BARBARA, CA 93106-9530, 805-893-8432, LUBIN@UCSB.EDU
Philip Lubin, University of California Santa Barbara, United States

IAC-19.A4.1.11
AUTOCORRELATION-BASED DETECTION METHODS FOR ASTROPHYSICAL AND INTERSTELLAR COMMUNICATION SIGNALS
Matteo Trudu, INAF, Italy

IAC-19.A4.1.12
KLT FOR AN EXPANDING UNIVERSE WITH SETI APPLICATIONS.
Nicolò Antonietti, Italy

IAC-19.A4.1.13
HYPER-SETI – A NEW WAY OF SEARCHING FOR EXTRATERRESTRIAL INTELLIGENCE
Hakan Kayal, University Wuerzburg, Germany

IAC-19.A4.1.14
SELF-REPLICATING THE HART-TIPLER ARGUMENT AGAINST THE EXISTENCE OF EXTRATERRESTRIAL INTELLIGENCE
Alex Ellery, Space Exploration and Engineering Group, Carleton Univeristy, Canada

IAC-19.A4.1.15
NOVEL TECHNOSIGNATURES
Albert Jackson, Triton Systems LLC, United States

IAC-19.A4.1.16
LUNAR OPPORTUNITIES FOR SETI
Eric Michaud, University of California, Berkeley, United States

IAC-19.A4.1.17
THE MOONBOUNCE PROJECT: OBSERVING THE EARTH AS A COMMUNICATING EXOPLANET
Julia DeMarines, University of California, Berkeley, United States

IAC-19.A4.1.18
SETI SPACE MISSIONS
Claudio Maccone, International Academy of Astronautics (IAA) and Istituto Nazionale di Astrofisica (INAF), Italy

A4.2. SETI 2: SETI and Society

October 22 2019, 14:45 — 143C

Co-Chair(s): John Elliott, Leeds Beckett University, United Kingdom; Michael A.G. Michaud, International Academy of Astronautics, United States;
Rapporteur(s): J. Emilio Enriquez, UC Berkeley / Radboud University Nijmegen, United States;

IAC-19.A4.2.1
SETI AND INTERNATIONAL SPACE LAW
Andrea Harrington, Air University, United States

IAC-19.A4.2.2
EVO-SETI QUARTICS YIELDING ET CIVILIZATIONS' ENERGY
Claudio Maccone, International Academy of Astronautics (IAA) and Istituto Nazionale di Astrofisica (INAF), Italy

IAC-19.A4.2.3 (withdrawn)
WHY WE'LL NEVER RECEIVE ENCYCLOPAEDIA GALACTICA
H. Paul Shuch, The SETI League, Inc., United States

IAC-19.A4.2.4
SETI AND POST-DETECTION: TOWARDS A NEW RESEARCH ROADMAP
Kathryn Denning, York University, Canada

IAC-19.A4.2.5
THE HISTORY OF THE IAA SETI PERMANENT COMMITTEE - 1980 TO 1989
Lori Walton, Tigerstar Geoscience, Canada

IAC-19.A4.2.6
LESSONS FROM STUDYING NONHUMAN ANIMAL COMMUNICATION
Denise Herzing, United States

IAC-19.A4.2.7
INCOSMICON: A NEW ITALIAN-PERUVIAN PROJECT ABOUT SETI AND BIG HISTORY
Paolo Musso, University of Insubria, Italy

IAC-19.A4.2.8
K-POP TO THE STARS: THE EXPORT OF KOREAN POP MUSIC AS AN ANALOG FOR EMBEDDED CULTURAL ARTIFACTS IN MESSAGES TO EXTRATERRESTRIAL INTELLIGENCE
Daniel Oberhaus, United States

IAC-19.A4.2.9
CHOMSKY IN THE COSMOS: LESSONS FROM NEUROLINGUISTICS FOR THE DESIGN OF MESSAGES FOR EXTRATERRESTRIAL INTELLIGENCE
Daniel Oberhaus, United States

IAC-19.A4.2.10
THE MORALITY OF INTERSTELLAR MESSAGING
Chelsea Haramia, Spring Hill College, United States

IAC-19.A4.2.11
SETI@HOME: A DETAILED ANALYSIS AND STUDY
Adarsh Agrawal, R.V.College of Engineering, India

IAC-19.A4.2.12
"WE (DO NOT) COME IN PEACE": THE IMAGES OF EXTRATERRESTRIAL LIFE IN CONTEMPORARY CONSPIRACY THEORIES
Alfredas Buiko, Vilnius University, Lithuania

IAC-19.A4.2.13
SETI SEARCH: PLAUSIBILITY OF A SETI PROBE AND SEARCH PARAMETERS FOR AN INTERSTELLAR SETI SEARCH
Ugur Guven, UN CSSTEAP, United States

IAC-19.A4.2.14
THE SEARCH FOR EXTRA-TERRESTRIAL LIFE : A REVIEW
Sagarika Valluri, RNSIT Bangalore, India

IAC-19.A4.2.15
WHAT DOES ECONOMICS HAVE TO DO WITH SETI?
Anamaria Berea, University of Central Florida (UCF), United States

A4.IP. Interactive Presentations - 48th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps

October 24 2019, 13:15 — IP Area

Co-Chair(s): Claudio Maccone, International Academy of Astronautics (IAA) and Istituto Nazionale di Astrofisica (INAF), Italy;

IAC-19.A4.IP.1
TECHNOSEARCH.SETI.ORG: THE POWER OF THE PAST; THE PROMISE OF THE FUTURE
Jill Tarter, SETI Institute, United States

IAC-19.A4.IP.2
FROM SIGNAL TO MEANING: A RESEARCH MAP FOR MESSAGE INTERPRETATION
John Elliott, Leeds Beckett University, United Kingdom

IAC-19.A4.IP.3
THE SEARCH FOR RESOURCE EXTRACTION TECHNOSIGNATURES IN THE SOLAR SYSTEM
Lori Walton, Tigerstar Geoscience, Canada

A5. 22nd IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM

Coordinator(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Maria Antonietta Perino, Thales Alenia Space Italia, Italy;

A5.1. Human Exploration of the Moon and Cislunar Space

October 23 2019, 09:45 — 145B

Co-Chair(s): Nadeem Ghafoor, Canadensys Aerospace Corporation, Canada; Michael Raftery, Boeing Defense Space & Security, United States;
Rapporteur(s): Marc Haese, DLR, German Aerospace Center, Germany;

IAC-19.A5.1.1
EVOLVED SLS PERFORMANCE CAPABILITY FOR ADVANCED EXPLORATION MISSIONS
Benjamin Donahue, The Boeing Company, United States

IAC-19.A5.1.2
CREWED LUNAR LANDING MISSION CAMPAIGN FROM THE GATEWAY
Timothy Cichan, Lockheed Martin Corporation, United States

IAC-19.A5.1.3
GATEWAY, PAVING THE WAY TO DEEP SPACE HUMAN EXPLORATION AND INNOVATIVE TECHNOLOGIES
Maria Antonietta Perino, Thales Alenia Space Italia, Italy

IAC-19.A5.1.4
CURRENT ACTIVITIES AND FUTURE VISION OF JAMSS TO NEAR-FUTURE LUNAR EXPLORATION
Shigeru Imai, Japan Manned Space Systems Corporation, Japan

IAC-19.A5.1.5
LUNAR ORBITAL PLATFORM SEGMENT FOR SUPPORT AND PROVISION OF LUNAR SURFACE MISSIONS
Dmitry Zarubin, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation

IAC-19.A5.1.6
SIERRA NEVADA CORPORATION'S GATEWAY ARCHITECTURE
Jeffrey Valania, Sierra Nevada Corporation, United States

IAC-19.A5.1.7
BUILDING AN ECONOMICAL AND SUSTAINABLE LUNAR INFRASTRUCTURE TO ENABLE HUMAN LUNAR MISSIONS
Allison Zuniga, NASA Ames Research Center, United States

IAC-19.A5.1.8
COMMON POWER AND ENERGY STORAGE SOLUTIONS TO SUPPORT LUNAR AND MARS SURFACE EXPLORATION MISSIONS
Lee Mason, National Aeronautics and Space Administration (NASA), United States

IAC-19.A5.1.9
LUNAR PROPELLANT FACTORY MISSION DESIGN TO SUSTAIN FUTURE HUMAN EXPLORATION
Sonia Alejandra Botta, University of Leicester, United Kingdom

IAC-19.A5.1.10
LUNAR MISSION TECHNOLOGY AND STANDARDS REVIEW: TOWARDS INTERNATIONAL COLLABORATION AND SAFE, SECURE DEMOCRATIZATION OF LUNAR ACCESS
Jacob Guglin, Massachusetts Institute of Technology (MIT), United States

IAC-19.A5.1.11
A PARAMETRIC ANALYSIS OF LOW-COST, NEAR-TERM, SUSTAINABLE HUMAN LUNAR EXPLORATION
David Akin, University of Maryland, United States

IAC-19.A5.1.12
ASSESSMENT OF LUNAR LANDER ARCHITECTURES IN TERMS OF PROGRAMMATIC STAKEHOLDER OBJECTIVES
William O'Neill, Purdue University, United States

IAC-19.A5.1.13
FIRST-MOVER ADVANTAGES RELATED TO LUNAR POLAR RESOURCE OPERATIONS AND THE IMPLICATIONS REGARDING HUMAN / ROBOT GROUND CREW MAKEUP
John Culton, United States

IAC-19.A5.1.14
CONTEMPORARY MARKET RESEARCH FOR LUNAR TOURISM: ESTIMATING THE SIZE AND VALUE OF THE MARKET
Mina Takla, CosmoX, Russian Federation

A5.2. Human Exploration of Mars

October 23 2019, 14:45 — 145B

Co-Chair(s): Maria Antonietta Perino, Thales Alenia Space Italia, Italy; Kathy Laurini, United States;
Rapporteur(s): Norbert Frischauf, TU Graz, Austria;

IAC-19.A5.2.1 (withdrawn)
POSSIBLE DEEP SPACE GATEWAY SUPPORT FOR HUMAN MARS MISSIONS
Kent Joosten, NASA, United States

IAC-19.A5.2.2 (withdrawn)
DEFINING THE REQUIRED NET HABITABLE VOLUME FOR LONG-DURATION EXPLORATION MISSIONS
Chel Stromgren, Binera, Inc., United States

IAC-19.A5.2.3
MARS HABITAT RESOURCE MANAGEMENT USING MULTI-AGENT MODELS AND MACHINE LEARNING FORECASTS
Simon Engler, University of Hawaii, United States

IAC-19.A5.2.4
SPACE RESOURCE LOGISTICS FOR HUMAN EXPLORATION TO MARS
Hao Chen, Georgia Institute of Technology, United States

IAC-19.A5.2.5
BIOREGENERATIVE SYSTEMS ON MARS : WHY, CHALLENGES, AND HOW TO GET THERE
Erwan Beauvois, International Master SEEDS, France

IAC-19.A5.2.6
MARS DIRECT 2.0 HOW TO SEND HUMANS TO MARS USING STARSHIPS.
Robert Zubrin, Pioneer Astronautics, United States

IAC-19.A5.2.7
PARAMETRIC EQUATION FOR THE SETTLEMENT OF MARS
Jean-Marc Salotti, Laboratoire de l'Intégration du Matériau au Système, France

IAC-19.A5.2.8
DESIGNING A TECHNOLOGY ECOSYSTEM FOR THE INTEGRATION OF ENVIRONMENTAL ANALYSIS AND HEALTH DIAGNOSTICS TO ASSIST HUMANS IN THE COLONISATION OF MARS
Anushri Rajendran, Swinburne University of Technology, Australia

IAC-19.A5.2.9 (withdrawn)
SYSTEM LEVEL DESIGN FOR A LARGE SCALE COLONY ON MARS
Paolo Guardabasso, ISAE-Supaero University of Toulouse, France

IAC-19.A5.2.10 (withdrawn)
DESIGN AND MODELING OF AN ELECTROCHEMICAL DEVICE PRODUCING METHANE/OXYGEN AND POLYETHYLENE FROM IN-SITU RESOURCES ON MARS
Jeffery Greenblatt, Emerging Futures, LLC, United States

IAC-19.A5.2.11
A DRAFT INTERNATIONAL TREATY OUTLINING A SYSTEM OF GOVERNANCE FOR THE COLONISATION OF MARS
Eleanor Griffin, Student, United Kingdom

IAC-19.A5.2.12
NEAR-EARTH ASTEROIDS MINING AS INTERPLANETARY ECONOMY SUPPLY: DESIGNING AN AUTONOMOUS MARS COLONY
Shamil Biktimirov, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.A5.2.13
THE 2019 ANALOG MARS MISSION SEASON AT THE DESERT MARS ANALOG RAMON STATION
Hilel Rubinstein, Israel

A5.3-B3.6. Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia

October 24 2019, 09:45 — 151A

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Mark Hempsell, The British Interplanetary Society, United Kingdom;
Rapporteur(s): Juergen Schlutz, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-19.A5.3-B3.6.1
SEEKER ROBOTIC FREE FLYER EVOLUTIONARY DEVELOPMENT APPROACH
Brian Banker, National Aeronautics and Space Administration (NASA), Johnson Space Center, United States

IAC-19.A5.3-B3.6.2
DEPLOYMENT OF THE SOLEX ENVIRONMENT FOR ANALOG SPACE TELEROBOTICS VALIDATION
Ralph Bayer, German Aerospace Center (DLR), Germany

IAC-19.A5.3-B3.6.3
POTENTIAL LIFE CYCLE BENEFITS OF INTELLIGENT TOOLS FOR GROUND CONTROL OF SPACE ROBOTICS
Christopher S. Langley, MDA, Canada

IAC-19.A5.3-B3.6.4
BENEFITS OF ROBUST INTRAVEHICULAR ROBOTIC SYSTEMS FOR DEEP SPACE EXPLORATION
Kyle Davidson, MDA Corporation, Canada

IAC-19.A5.3-B3.6.5
EVALUATION OF A HIGHLY DEXTEROUS ROBOTIC MANIPULATOR FOR UTILIZATION OF ON-ORBIT SERVICING
Caitlin King, United States

IAC-19.A5.3-B3.6.6
A REINFORCEMENT LEARNING APPROACH FOR THE AUTONOMOUS ASSEMBLY OF IN-SPACE HABITATS AND INFRASTRUCTURES IN UNCERTAIN ENVIRONMENTS
Joshua Moser, Virginia Polytechnic Institute and State University, United States

IAC-19.A5.3-B3.6.7
DEVELOPING GENERAL AI, BLOCKCHAIN, & AR/MR FOR EMERGENCY MEDICAL TRIAGE, DISASTER RELIEF AND REMOTE MEDICAL RESCUE FOR ANALOG ASTRONAUTS LIVING IN I.C.E
Susan Ip-jewell, Mars Academy USA, United States

IAC-19.A5.3-B3.6.8
ETHICAL IMPLICATIONS OF THE USE OF ARTIFICIAL INTELLIGENCE IN HUMAN SPACE OPERATIONS.
Michael Pope, Embry-Riddle Aeronautical University, United States

IAC-19.A5.3-B3.6.9
ROBOTIC CONSTRUCTION & PROTOTYPING OF A 3D-PRINTED MARS SURFACE HABITAT
Melodie Yashar, SEArch+ LLC, United States

IAC-19.A5.3-B3.6.10
HEXHAB 3D CONSTRUCTION-PRINTED PLANETARY HABITAT FOR EXTREME ENVIRONMENTS
Samuel Ximenes, WEX Foundation, United States

A5.4-D2.8. Space Transportation Solutions for Deep Space Missions

October 25 2019, 09:45 — 146C

Co-Chair(s): K. Bruce Morris, RUAG Space, United States; Josef Wiedemann, DLR (German Aerospace Center), Germany;
Rapporteur(s): Gerhard Schwehm, ESA (retired), The Netherlands;

IAC-19.A5.4-D2.8.1
NASA'S SPACE LAUNCH SYSTEM: PAYLOAD OPPORTUNITIES FOR LUNAR EXPLORATION, SCIENCE MISSIONS
Steve Creech, National Aeronautics and Space Administration (NASA), United States

IAC-19.A5.4-D2.8.2
EMPOWERING INNOVATION: THE GATEWAY POWER AND PROPULSION ELEMENT PUBLIC-PRIVATE PARTNERSHIP
Ronald Ticker, National Aeronautics and Space Administration (NASA), United States

IAC-19.A5.4-D2.8.3
FAST SOLAR SYSTEM TRANSPORTATION WITH ELECTRIC PROPULSION POWERED BY DIRECTED ENERGY
Todd F. Sheerin, The Aerospace Corporation, United States

IAC-19.A5.4-D2.8.4
THE DEVELOPMENT OF A LAUNCH SYSTEM FOR THE NASA PARKER SOLAR PROBE MISSION
Steven Vernon, Johns Hopkins University Applied Physics Laboratory, United States

IAC-19.A5.4-D2.8.5
A GATEWAY SUPPLY MISSION SCENARIO AND FLIGHT PLAN WITH UPGRADED H3 AND HTV-X
Shoyo Hyodo, Mitsubishi Heavy Industries, Ltd., Japan

IAC-19.A5.4-D2.8.6 (withdrawn)
CREWED CERES MISSION USING HUMAN MARS TRANSPORT
Charles Esty, National Aeronautics and Space Administration (NASA), United States

IAC-19.A5.4-D2.8.7
EXTENDING THE CURRENT NASA MARS HUMAN EXPLORATION ARCHITECTURE TO INCLUDE TITAN
Daniel White, Embry-Riddle Astronautical University, United States

IAC-19.A5.4-D2.8.8
REUSABLE IN-SPACE TRANSPORTATION ARCHITECTURE OPTIONS FOR HUMAN MARS EXPEDITIONS
Patrick Chai, National Aeronautics and Space Administration (NASA), United States

IAC-19.A5.4-D2.8.9
MARS/EUROPA INPPS HIGH POWER SPACE TRANSPORTATION
Frank Jansen, DLR (German Aerospace Center), Germany

IAC-19.A5.4-D2.8.10
APPLYING MULTIPLE STREAMS POLICY ANALYSIS TO HISTORIC AND CURRENT NUCLEAR THERMAL PROPULSION
Nathanial Long, The Ohio State University, United States

IAC-19.A5.4-D2.8.11
AN ANALYSIS AND SIMULATION OF INTERPLANETARY TRAJECTORIES FOR THE JESSE OWENS NUCLEAR THERMAL PROPULSION SPACECRAFT
Leland Klein, The Ohio State University College of Engineering, United States

IAC-19.A5.4-D2.8.12
THE VALUE OF ENHANCED DELTA V CAPACITY: A EUROPA CLIPPER CASE STUDY
Alexander Aueron, University of Alabama in Huntsville, United States

IAC-19.A5.4-D2.8.13
EXPLORATION OF THE EDGE OF HELIOSPHERE THROUGH STRATEGICALLY PLACED SOLAR-SAIL PROPELLED SATELLITES
Vipul Mani, India

A5.IP. Interactive Presentations - 22nd IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Maria Antonietta Perino, Thales Alenia Space Italia, Italy;

IAC-19.A5.IP.1 (withdrawn)
CIS-LUNAR PROPULSION OPTION COMPARISON
Daniel Levack, Aerojet Rocketdyne, United States

IAC-19.A5.IP.2 (withdrawn)
LUNAR ORBITAL PLATFORM-GATEWAY FUNCTIONALITY ENHANCED BY USING ADVANCED SPACE MANUFACTURING SYSTEMS ASMS, (INC). SPACE UTILITY MODULE
Peter Humphries, United States

IAC-19.A5.IP.3
FINDING TRAJECTORIES TO SEND A SPACECRAFT TO AN ASTEROID TO CHANGE ITS ORBIT AROUND THE SUN
Geraldo Magela Couto Oliveira, Federal Center for Technological Education of Minas Gerais, Brazil

IAC-19.A5.IP.4
OXYGEN PRODUCTION ON MARS WITH IN-SITU RESOURCE UTILIZATION
Alina Kunitskaya, University of British Columbia, Canada

IAC-19.A5.IP.5
PERISCOPE: PERIAPSIS SUBSURFACE CAVE OPTICAL EXPLORER; LUNAR CAVE CHARACTERIZATION FROM ORBIT
Jeffrey Nosanov, Nosanov Consulting, United States

IAC-19.A5.IP.6 (withdrawn)
TESTING FOR THE GROUND TEST AND ANALYSIS PROTOCOL FOR NASA'S NEXTSTEP PHASE 2 HABITATION CONCEPTS
Michael Gernhardt, United States

IAC-19.A5.IP.7 (withdrawn)
HEXHAB VIRTUAL WALK-THROUGH OF A FULLY OUTFITTED 3D PRINTED MARS HABITAT
Samuel Ximenes, WEX Foundation, United States

IAC-19.A5.IP.8
PILOTED ROVERS FOR EXPLORATION OF THE MOON, MARS AND OTHER PLANETS
Oleg Aleksandrov, Private individual www.oleg.space, United States

IAC-19.A5.IP.9
ADVANCED MONITORING SYSTEM FOR MARS COLONIZATION
Hitesh Kumar Tetarwal, University of Petroleum and Energy Studies, India

A6. 17th IAA SYMPOSIUM ON SPACE DEBRIS

Coordinator(s): Christophe Bonnal, Centre National d'Etudes Spatiales (CNES), France; J.-C. Liou, National Aeronautics and Space Administration (NASA), United States;

A6.1. Space Debris Detection, Tracking and Characterization

October 21 2019, 15:00 — 150B

Co-Chair(s): Thomas Schildknecht, Astronomical Institute University of Bern (AIUB) / SwissSpace Association, Switzerland; Mark A. Skinner, The Aerospace Corporation, United States;
Rapporteur(s): Vladimir Agapov, Russian Academy of Sciences, Russian Federation;

IAC-19.A6.1.1
OPERATIONAL OBSERVATIONS OF LEO OBJECTS WITH OPTICAL SENSORS
Noelia Sanchez Ortiz, Deimos Space S.L., Spain

IAC-19.A6.1.2
METHODS FOR DETECTING SUBTLE SPACE DEBRIS USING INFORMATION FROM OPTICAL TELESCOPES
Natalia Zavialova, Russian Federation

IAC-19.A6.1.3
SUB-MILLIMETER SPACE DEBRIS MEASUREMENT IN LOW EARTH ORBIT: THE DEBRIS DENSITY RETRIEVAL AND ANALYSIS (DEDRA) MISSION
Andrea Meraner, Technical University of Munich, Germany

IAC-19.A6.1.4
WISE THERMAL IR OBSERVATIONS OF IDCSP SATELLITES
Patrick Seitzer, University of Michigan, United States

IAC-19.A6.1.5
DEVELOPMENT OF A HIGH FIDELITY SIMULATOR FOR GENERALISED PHOTOMETRIC BASED SPACE OBJECT CLASSIFICATION USING MACHINE LEARNING
James Allworth, The University of Sydney, Australia

IAC-19.A6.1.6
SPACE DEBRIS CHARACTERIZATION THROUGH THE SLOVAK DEBRIS LIGHT CURVE CATALOGUE
Jiri Silha, Comenius University, Faculty of Mathematics, Physics and Informatics, Bratislava, Slovakia, Slovak Republic

IAC-19.A6.1.7
COMPUTING SURFACE BRIGHTNESS INTEGRALS OF ARTIFICIAL SPACE OBJECTS WITH AXISYMMETRIC BODIES USING PHOTOMETRIC LIGHT CURVES
Katiyayni Balachandran, University of Texas at Arlington, United States

IAC-19.A6.1.8
BIOMETRIC INSPIRED SATELLITE CHARACTERIZATION USING HYPERTEMPORAL PHOTOMETRY
Vishnuu Mallik, The University of Texas at Austin, United States

IAC-19.A6.1.9
INFRARED DETECTION OF SPACE DEBRIS AND THE APPLICABILITY OF OBSERVATION DATA
Marcel Becker, TU Braunschweig, Germany

IAC-19.A6.1.10
SPACE WEATHER INDUCED OPTICAL CHANGES IN HAMR DEBRIS MATERIALS
Daniel Engelhart, Assurance Technology Corporation, United States

A6.10-B4.10. Joint Small Satellite/Space Debris Session to Promote the Long-Term Sustainability of Space

October 25 2019, 09:45 — 151A

Co-Chair(s): Darren McKnight, Integrity Applications Incorporated (IAI), United States; Igor Usovik, Central Research Institute of Machine Building (TSNIIMASH), Russian Federation;
Rapporteur(s): Upasana Dasgupta, Institute of Air and Space Law, McGill University, Canada;

IAC-19.A6.10-B4.10.1
ENABLING A SUSTAINABLE LEO ENVIRONMENT THROUGH OPERATIONAL TRANSPARENCY
Edward Lu, LeoLabs, United States

IAC-19.A6.10-B4.10.2
USAGE OF LIGHT EMITTING DIODES FOR SMALL SATELLITES TRACKING, EARLY IDENTIFICATION AFTER LAUNCH AND LIGHT-BASED COMMUNICATION
Paolo Marzioli, Sapienza University of Rome, Italy

IAC-19.A6.10-B4.10.3
RESPONSIBLE SATELLITE DESIGN AND OPERATIONAL PRACTICES: A CRITICAL COMPONENT OF EFFECTIVE SPACE ENVIRONMENT MANAGEMENT (SEM)
Timothy Maclay, Oneweb, United States

IAC-19.A6.10-B4.10.4
IONOSPHERIC DRAG FOR ACCELERATED DEORBIT FROM UPPER LOW-EARTH-ORBIT
Brenton Smith, UNSW Australia, Australia

IAC-19.A6.10-B4.10.5
AN OPEN-SOURCE ORBITAL SIMULATION AND MISSION ANALYSIS SOFTWARE FOR CUBESATS
Conor O'Toole, University College Dublin (UCD), Ireland

IAC-19.A6.10-B4.10.6
A YEAR SINCE THE LAUNCH OF THE NABEO-1 CUBESAT DRAGSAIL ON ROCKET LAB'S "IT'S BUSINESS TIME" ROCKET: METHODS OF VERIFICATION AND OBSERVATION
Thomas Sinn, Deployables Cubed, Germany

IAC-19.A6.10-B4.10.7
PW-SAT2 DEORBIT SAIL POST-DEPLOYMENT EFFECTIVENESS ANALYSIS
Artur Lukasik, GMV Innovating Solutions Sp. z o.o., Poland

IAC-19.A6.10-B4.10.8
TOWARDS A FUTURE DEBRIS REMOVAL SERVICE: EVOLUTION OF AN ADR BUSINESS MODEL
Harriet Brettle, Astroscale Ltd, United Kingdom

IAC-19.A6.10-B4.10.9
TOWARDS A COST EFFECTIVE IN-ORBIT SERVICING/ADR USING MODULAR AND STANDARIZED APPROACH
Pablo Colmenarejo, GMV Innovating Solutions, Spain

A6.2. Modelling and Risk Analysis

October 22 2019, 09:45 — 150B

Co-Chair(s): Marlon Sorge, The Aerospace Corporation, United States; Carmen Pardini, ISTI-CNR, Italy;
Rapporteur(s): Daniel Oltrogge, Analytical Graphics, Inc., United States;

IAC-19.A6.2.1
NUMERICAL INVESTIGATION ON THE STANDARD CATASTROPHIC BREAK-UP CRITERIA
Martin Schimmerohn, Fraunhofer EMI, Germany

IAC-19.A6.2.2
FRAGMENTS DISTRIBUTION PREDICTION FOR ENVISAT CATASTROPHIC FRAGMENTATION
Lorenzo Olivieri, CISAS "G. Colombo" - University of Padova, Italy

IAC-19.A6.2.3
A SEMI-ANALYTICAL APPROACH TO LOW-THRUST COLLISION AVOIDANCE MANOEUVRE DESIGN
Juan Luis Gonzalo, Politecnico di Milano, Italy

IAC-19.A6.2.4
LONG-TERM ENVIRONMENTAL EFFECTS OF DEPLOYING THE ONEWEB SATELLITE CONSTELLATION
Hugh Lewis, University of Southampton, United Kingdom

IAC-19.A6.2.5
HOW AN AWARE USAGE OF THE LONG-TERM DYNAMICS CAN IMPROVE THE LONG-TERM SITUATION IN THE LEO REGION
Alessandro Rossi, IFAC-CNR, Italy

IAC-19.A6.2.6
NEWSPACE AND ITS IMPLICATIONS FOR SPACE DEBRIS MODELS
Samuel Diserens, University of Southampton, United Kingdom

IAC-19.A6.2.7
IMPACTS OF LARGE CONSTELLATIONS AND MISSION DISPOSAL GUIDELINES ON THE FUTURE SPACE DEBRIS ENVIRONMENT
Gregory Henning, The Aerospace Corporation, United States

IAC-19.A6.2.8
VARIANCE-COVARIANCE SIGNIFICANT FIGURE REDUCTION AND ITS EFFECT ON COLLISION PROBABILITY CALCULATION
Salvatore Alfano, Analytical Graphics, Inc., United States

IAC-19.A6.2.9
WHAT IS THE COST OF NOT DOING DEBRIS REMEDIATION NOW?
Darren McKnight, Integrity Applications Incorporated (IAI), United States

IAC-19.A6.2.10
EVALUATION OF ACTIVE DEBRIS REMOVAL STRATEGY USING A DEBRIS EVOLUTIONARY MODEL
Satomi Kawamoto, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.A6.2.11
THE OPTIMAL COLLISION AVOIDANCE MANEUVER WITH MULTIPLE OBJECTS IN GEO
Kota Sato, Kyushu University, Japan

IAC-19.A6.2.12
LONG-TERM EVOLUTION AND LIFETIME ANALYSES OF GEOSTATIONARY TRANSFER ORBITS WITH SOLAR RADIATION PRESSURE
Yue Wang, Beihang University, China

A6.3. Impact-Induced Mission Effects and Risk Assessments

October 22 2019, 14:45 — 150B

Co-Chair(s): Jean-Claude Traineau, Office National d'Etudes et de Recherches Aérospatiales (ONERA), France; Moriba Jah, The University of Texas at Austin, United States;
Rapporteur(s): Norman Fitz-Coy, University of Florida, United States;

IAC-19.A6.3.1
PREDICTING PERFORATION AND RUPTURE OF COMPOSITE OVERWRAPPED PRESSURE VESSELS FOLLOWING AN ORBITAL DEBRIS PARTICLE IMPACT
William P. Schonberg, Missouri University of Science and Technology (Missouri S&T), United States

IAC-19.A6.3.2
NEW TECHNIQUE FOR LAUNCHING SPHERICAL PROJECTILE WITH MILLIMETER SCALE OVER 10 KM/S USING STRONG LASER-DRIVEN AND SOME EXPERIMENTS FOR WHIPPLE SHIELDS
Zizheng Gong, Beijing Institute of Spacecraft Environment Engineering, China Academy of Space Technology (CAST), China

IAC-19.A6.3.3
BIGGER FRAGMENTS BIGGER PICTURE – CHARACTERIZING DEBRISAT FRAGMENTS
Samantha Allen, University of Florida, United States

IAC-19.A6.3.4
EXAMINATION OF THE IMPLICATIONS OF LARGER DEBRISAT FRAGMENT CHARACTERISTICS
Marlon Sorge, The Aerospace Corporation, United States

IAC-19.A6.3.5
STUDY ON THE MECHANISM OF KINETIC ENERGY DISSIPATION OF GRADED IMPEDANCE MATERIALS WITH HIGH EFFICIENCY
Guangming Song, China Academy of Space Technology (CAST), China

IAC-19.A6.3.6
STUDY OF THE TEMPERATURE EFFECTS ON THE SHIELDING PERFORMANCE OF A WHIPPLE SHIELD ENHANCED BY TI-AL-MG IMPEDANCE-GRADED MATERIALS
Yan Cao, China

IAC-19.A6.3.7
A SIMPLE MODEL FOR SHAPE EFFECTS IN HVI
Lorenzo Olivieri, CISAS "G. Colombo" - University of Padova, Italy

IAC-19.A6.3.8
EXAMINATION OF SATELLITE COLLISION SCENARIOS SPANNING LOW TO HYPERVELOCITY ENCOUNTERS USING SEMI-EMPIRICAL MODELS
Alessandro Francesconi, University of Padova - DII/CISAS, Italy

IAC-19.A6.3.9
NUMERICAL EVALUATION OF THE INFLUENCE OF PRE-ARRANGED FAULT LINES IN THE FRAGMENTATION OF SATELLITES SUBJECTED TO HYPERVELOCITY COLLISIONS
Giulia Sarego, University of Padova, CISAS – "G. Colombo" Center of Studies and Activities for Space, Italy

IAC-19.A6.3.10
HOW HYPERVELOCITY IMPACTS CAN AFFECT THE LISA MISSION – THE MIRAD STUDY
Robin Putzar, Fraunhofer EMI, Germany

IAC-19.A6.3.11
ASSESSING DEBRIS STRIKES IN SPACECRAFT TELEMETRY: DEVELOPMENT AND COMPARISON OF VARIOUS TECHNIQUES
Anne Aryadne Bennett, University of Colorado Boulder, United States

A6.4. Mitigation - Tools, Techniques and Challenges

October 23 2019, 09:45 — 150B

Co-Chair(s): Holger Krag, European Space Agency (ESA), Germany; Satomi Kawamoto, Japan Aerospace Exploration Agency (JAXA), Japan;
Rapporteur(s): Pierre Omaly, CNES, France;

IAC-19.A6.4.1
DEBRIS MITIGATION, HOW TO CHANGE AN "UGLY DUCKLING" SATELLITE IN A "SWAN" SATELLITE : THE EXAMPLE OF MICROSCOPE
Valerio CIPOLLA, Centre National d'Etudes Spatiales (CNES), France

IAC-19.A6.4.2
LONG-TERM SIMULATIONS TO ASSESS THE EFFECTS OF DRAG AND SOLAR SAILS ON THE SPACE DEBRIS ENVIRONMENT
Camilla Colombo, Politecnico di Milano, Italy

IAC-19.A6.4.3
KICKING THE SPACE JUNK HABIT
Lars Hoffman, Rocket Lab, United States

IAC-19.A6.4.4
ENVIRONMENT CAPACITY AS AN EARLY MISSION DESIGN DRIVER
Francesca Letizia, European Space Agency (ESA), Germany

IAC-19.A6.4.5
ENVIRONMENTAL SUSTAINABILITY OF LARGE SATELLITE CONSTELLATIONS IN LOW EARTH ORBIT
Carmen Pardini, ISTI-CNR, Italy

IAC-19.A6.4.6
THE H2020 REDSHIFT PROJECT: A SUCCESSFUL EUROPEAN EFFORT TOWARDS SPACE DEBRIS MITIGATION
Alessandro Rossi, IFAC-CNR, Italy

IAC-19.A6.4.7
COMPARISON OF DISPOSAL OPTIONS FOR TUNDRA ORBITS IN TERMS OF DELTA-V COST AND LONG-TERM COLLISION RISK
Alan B. Jenkin, The Aerospace Corporation, United States

IAC-19.A6.4.8 (withdrawn)
DEBRIS COLLISION MITIGATION FROM THE GROUND USING LASER GUIDE STAR ADAPTIVE OPTICS AT MOUNT STROMLO OBSERVATORY: RESULTS FROM THE FIRST ARTIFICIAL STAR EVER CREATED IN AUSTRALIAN SKIES
Celine D'Orgeville, Australian National University (ANU), Australia

IAC-19.A6.4.9
DRAMA 3.0 - UPGRADE OF ESA'S DEBRIS RISK ASSESSMENT AND MITIGATION ANALYSIS TOOL SUITE
Vitali Braun, IMS Space Consultancy, Germany

IAC-19.A6.4.10
AEROTHERMODYNAMICS MODELLING OF COMPLEX SHAPES IN THE DEBRISK ATMOSPHERIC REENTRY TOOL: METHODOLOGY AND VALIDATION
Julien ANNALORO, Centre National d'Etudes Spatiales (CNES), France

A6.5. Post Mission Disposal and Space Debris Removal (1)

October 23 2019, 14:45 — 150B

Co-Chair(s): Fabio Santoni, Sapienza University of Rome, Italy; Annamaria Nassisi, Thales Alenia Space Italia, Italy;
Rapporteur(s): Laurent Francillout, CNES, France;

IAC-19.A6.5.1
THE IN-ORBIT TECHNOLOGIES DEMONSTRATIONS OF THE REMOVEDEBRIS MISSION
Guglielmo Aglietti, Surrey Space Centre, University of Surrey, United Kingdom

IAC-19.A6.5.2
THE ELSA-D END-OF-LIFE DEBRIS REMOVAL MISSION: PREPARING FOR LAUNCH
Chris Blackerby, ASTROSCALE JAPAN Inc., Japan

IAC-19.A6.5.3
DEMONSTRATION OF SPACE DEBRIS DEORBIT BY ELECTRODYNAMIC TETHER
Zheng Hong Zhu, York University, Canada

IAC-19.A6.5.4
WHOLESALE LEO DEBRIS CAPTURE AND REMOVAL USING EDDE
Joseph Carroll, Tether Applications, Inc., United States

IAC-19.A6.5.5
SIMULATION AND TENSION CONTROL OF A TETHER-ACTUATED CLOSING MECHANISM FOR NET-BASED CAPTURE OF SPACE DEBRIS
Corey Miles, McGill University, Canada

IAC-19.A6.5.6
FEASIBILITY ANALYSIS OF LARGE-SIZE SPACE DEBRIS DE-ORBITING FROM NEAR-EARTH ORBITS WITH RESPECT TO THE INITIAL MASS OF A FUELLED SC-COLLECTOR
Andrey Baranov, Keldysh Institute of Applied Mathematics of RAS, Russian Federation

IAC-19.A6.5.7
RAPID COMPUTATION OF MEO SATELLITE DEORBIT TIMES USING DOUBLY-AVERAGED DYNAMICS
Marielle Pellegrino, Colorado Center for Astrodynamics Research, University of Colorado, United States

IAC-19.A6.5.8
A PERMANENT SOLUTION FOR CONTROLLING THE SMALL SPACE DEBRIS POPULATION
Marshall Kaplan, Launchspace Technologies Corporation, United States

IAC-19.A6.5.9
IMPLEMENTATION OF A HIGH THRUST MONO-PROPELLANT ENGINE ON A PROPULSION MODULE
Charles Gonin, Airbus D&S, United Kingdom

IAC-19.A6.5.10
GRASPING MECHANISM CONCEPTS ORIENTED TO DEBRIS FOR REMOVAL APPLICATION
Michael Scarcia, Turin Polytechnical University, Italy

A6.6. Post Mission Disposal and Space Debris Removal (2)

October 24 2019, 09:45 — 150B

Co-Chair(s): Luca Rossettini, D-Orbit, Italy; Emma Kerr, RMIT University, Australia;
Rapporteur(s): Nicolas Bérend, ONERA - The French Aerospace Lab, France;

IAC-19.A6.6.1
CONFIGURATION SCHEMES OF ACTIVE SPACECRAFTS FOR REORBITING LARGE SIZE SPACE DEBRIS
Georgy Shcheglov, Bauman Moscow State Technical University, Russian Federation

IAC-19.A6.6.2
HOW ON ORBIT FUELING SUPPORTS THE DEORBIT TUG BUSINESS CASE
Jeremy Schiel, Orbit Fab, United States

IAC-19.A6.6.3
SPACE STATION CONCEPT FOR ACTIVE DEBRIS REMOVAL APPLYING ECODESIGN PRINCIPLES
Moacir Becker, International Space University, Costa Rica

IAC-19.A6.6.4
REDSHIFT DISPOSAL MODULE FOR THE DESIGN OF END-OF-LIFE DISPOSAL TRAJECTORIES FOR LEO TO GEO MISSIONS
Camilla Colombo, Politecnico di Milano, Italy

IAC-19.A6.6.5
MODULAR AND LOW COST EXPANSION RESISTANCE INCREASING DE-ORBITING DEVICE FOR SMALL SATELLITE AND LARGE CONSTELLATION
Zizheng Gong, Beijing Institute of Spacecraft Environment Engineering, China Academy of Space Technology (CAST), China

IAC-19.A6.6.6
IN-ORBIT PERFORMANCE OF DEORBITING SAILS
Ben Taylor, Surrey Space Centre, University of Surrey, United Kingdom

IAC-19.A6.6.7
RESULTS OF THE REMOVEDEBRIS VISION-BASED NAVIGATION FROM OPTICAL IMAGES
Eric Marchand, INRIA, France

IAC-19.A6.6.8
CHARACTERIZING THE IMPACT OF ROTATIONAL VELOCITY ON A LASER-BASED DEBRIS REMOVAL SYSTEM
Evan Gjesvold, North Dakota State University, United States

IAC-19.A6.6.9
PRELIMINARY DESIGN OF AN END-OF-LIFE ADR MISSION FOR LARGE CONSTELLATIONS
Jason Forshaw, Astroscale Ltd, United Kingdom

IAC-19.A6.6.10
ESCAPE, DISPOSAL AND RE-ENTRY TRAJECTORIES FROM LUNAR NON-KEPLERIAN ORBITS
Lorenzo Bucci, Politecnico di Milano, Italy

A6.7. Operations in Space Debris Environment, Situational Awareness

October 24 2019, 14:45 — 150B

Co-Chair(s): T.S. Kelso, Center for Space Standards and Innovation (CSSI), United States; Noelia Sanchez Ortiz, Deimos Space S.L., Spain;
Rapporteur(s): Vincent Martinot, Thales Alenia Space France, France;

IAC-19.A6.7.1
ACHIEVEMENTS AND CHALLENGES IN MORE THAN 3 YEARS OF FULL OPERATION OF ASPOS OKP
Vladimir Agapov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

IAC-19.A6.7.2
SOVEREIGN AUSTRALIAN SPACE SITUATIONAL AWARENESS
Luke Heffernan, The University of Adelaide, Australia

IAC-19.A6.7.3
LAUNCH ACCESS TO SPACE IN THE PRESENCE OF LARGE LEO CONSTELLATIONS AND THE SPACE FENCE
Glenn Peterson, The Aerospace Corporation, United States

IAC-19.A6.7.4
DESIGN & DEVELOPMENT OF AN OPTIMIZED SENSOR SCHEDULING & TASKING PROGRAMME FOR TRACKING SPACE OBJECTS
David Shteinman, Industrial Sciences Group, Australia

IAC-19.A6.7.5
MAKING SMALL SATELLITES VISIBLE: NANOSAT TRACKING AND IDENTIFICATION TECHNIQUES AND TECHNOLOGIES
Mark Skinner, The Aerospace Corporation, United States

IAC-19.A6.7.6
REVISITING THE FILTERING PROBLEM
Shambo Bhattacharjee, University of Leeds, United Kingdom

IAC-19.A6.7.7
SPACECRAFT COLLISION AVOIDANCE USING AERODYNAMIC DRAG
Sanny Omar, University of Florida, United States

IAC-19.A6.7.8
VALUE-ADDED SERVICES AT GEO DERIVED FROM PERSISTENT OBSERVATION
Brien Flewelling, United States

IAC-19.A6.7.9
DATA FUSION APPLICATION FOR IMPROVING ORBIT DETERMINATION AND RE-ENTRY PREDICTIONS
Elena Vellutini, Italian Space Agency (ASI), Italy

IAC-19.A6.7.10
ENHANCE THE TLE CATALOG THROUGH SHARING MACHINE LEARNING MODELS
Hao Peng, Rutgers, The State University of New Jersey, United States

A6.8. Policy, Legal, Institutional and Economic Aspects of Space Debris Detection, Mitigation and Removal (Joint Session with IAF Space Security Committee)

October 25 2019, 09:45 — 150B

Co-Chair(s): David B. Spencer, The Pennsylvania State University, United States; Serge Plattard, University College London (UCL), United Kingdom; Alexander Soucek, European Space Agency (ESA/ESRIN), Italy; Samantha Le May, RMIT University (Royal Melbourne Institute of Technology), Australia;

IAC-19.A6.8.1
CNES TOWARDS FUTURE SPACE TRAFFIC MANAGEMENT
Christophe Bonnal, Centre National d'Etudes Spatiales (CNES), France

IAC-19.A6.8.2
POLITICAL AND INSTITUTIONAL CHALLENGES TO GLOBAL SPACE DEBRIS MITIGATION
Josh Wolny, Secure World Foundation, United States

IAC-19.A6.8.3
SPACE ENVIRONMENT MANAGEMENT: FRAMING THE OBJECTIVE AND SETTING PRIORITIES FOR CONTROLLING ORBITAL DEBRIS RISK
Timothy Maclay, Oneweb, United States

IAC-19.A6.8.4
THE RISE OF SMALL SATELLITES CONSTELLATIONS: ECONOMIC ANALYSIS AND POLITICAL MEASURES FOR ORBITAL DEBRIS PROBLEMS
Clelia Iacomino, SEE Lab - SDA Bocconi School of Management, Italy

IAC-19.A6.8.5
MEGA CONSTELLATIONS – LIABILITY AND INSURANCE ISSUES
Cristiana Santos, Université de Toulouse 1 Capitole, France

IAC-19.A6.8.6
MEGA-CONSTELLATION ANALYSIS: RELIABILITY STRATEGY AND INSURANCE POLICY
Nikita Veliev, Skoltech Space Center, Russian Federation

IAC-19.A6.8.7
AUTHORIZATION AND CONTINUOUS SUPERVISION OF ASTROSCALE'S DE-ORBIT ACTIVITIES: A REVIEW OF THE REGULATORY ENVIRONMENT FOR END OF LIFE (EOL) AND ACTIVE DEBRIS REMOVAL (ADR) SERVICES
Chris Blackerby, ASTROSCALE JAPAN Inc., Japan

IAC-19.A6.8.8
SPACE SALVAGE & NATIONAL EFFORTS: POLICY AND LAW IMPACTING THE VALIDITY OF CLEANING UP ORBITAL SPACE
Michael Dodge, University of North Dakota, United States

IAC-19.A6.8.9
SPACE SUSTAINABILITY RATING: TOWARDS AN ASSESSMENT TOOL TO ASSURE THE LONG-TERM SUSTAINABILITY OF THE SPACE ENVIRONMENT
Minoo Rathnasabapathy, Massachusetts Institute of Technology (MIT), United States

IAC-19.A6.8.10
INTERNATIONAL LIABILITY AND RESPONSIBILITY IN THE CONTEXT OF SPACE DEBRIS REMOVAL
Cordula Steinkogler, University of Vienna, Austria

IAC-19.A6.8.11
MATCHING LEGAL LIABILITIES WITH TECHNICAL SOLUTIONS TO GEOSTATIONARY ORBIT DEBRIS
Mark Hempsell, The British Interplanetary Society, United Kingdom

IAC-19.A6.8.12
LEGAL FRAMEWORKS FOR SPACE DEBRIS MITIGATION: EXAMINING STATE PRACTICES AND TREATY OBLIGATIONS
SENJUTI MALLICK, United States

A6.9. Orbit Determination and Propagation

October 25 2019, 13:30 — 150B

Co-Chair(s): Heiner Klinkrad, European Space Agency (ESA), Germany; Juan Carlos Dolado Perez, Centre National d'Etudes Spatiales (CNES), France;
Rapporteur(s): Fabrizio Piergentili, Sapienza University of Rome, Italy;

IAC-19.A6.9.1
BI-STATIC OBSERVATIONS WITH SMARTNET(TM)
Johannes Herzog, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Germany

IAC-19.A6.9.2
ANALYSING THE CORRELATION PERFORMANCE OF ESA'S PLANNED SPACE-BASED GEO SURVEILLANCE MISSION
Benedikt Reihs, Astronomical Institute University of Bern (AIUB), Switzerland

IAC-19.A6.9.3
TOWARDS COVARIANCE REALISM IN BATCH LEAST-SQUARES ORBIT DETERMINATION
Sergi López-Jiménez, GMV Aerospace & Defence SAU, Spain

IAC-19.A6.9.4
UNDERSTANDING THE DISTRIBUTION OF THE PROPAGATED ANGLES-ONLY POSITION VECTOR
Shambo Bhattacharjee, University of Leeds, United Kingdom

IAC-19.A6.9.5
ON THE GAUSSIANITY VALIDITY TIME FOR ORBITAL UNCERTAINTY PROPAGATION
Carlos Yanez, Centre National d'Etudes Spatiales (CNES), France

IAC-19.A6.9.6
CONJUGATE UNSCENTED TRANSFORMATION BASED SEMI-ANALYTIC APPROACH FOR UNCERTAINTY CHARACTERIZATION OF ANGLES-ONLY INITIAL ORBIT DETERMINATION ALGORITHMS
Sean Hixon, The Pennsylvania State University, United States

IAC-19.A6.9.7
HIGH-PRECISION DETECTION AND HIGH-SPEED TRACKING ALGORITHM FOR SPACE DEBRIS
Jiangtao Wei, Aerospace Flight Dynamics Laboratory,Northwestern Polytechnical University,Xi'an,China, China

IAC-19.A6.9.8
CLOSE APPROACH ANALYSIS FOR SENSOR TASKING
Sven Kevin Flegel, Space Environment Research Centre Ltd. (SERC), Australia

IAC-19.A6.9.9
SPACE SURVEILLANCE WITH THE MULTIBEAM RADAR SENSOR BIRALES
Matteo Losacco, Politecnico di Milano, Italy

IAC-19.A6.9.10
OPTIMIZED RE-ENTRY TIME PREDICTION OF MOLNIYA ORBIT OBJECTS
Harishkumar Sellamuthu, Karunya University, India

A6.IP. Interactive Presentations - 17th IAA SYMPOSIUM ON SPACE DEBRIS

October 24 2019, 13:15 — IP Area

Co-Chair(s): Christophe Bonnal, Centre National d'Etudes Spatiales (CNES), France; Darren McKnight, Integrity Applications Incorporated (IAI), United States; Tetsuo Yasaka, QPS Institute, Japan;

IAC-19.A6.IP.1
DEVELOPMENT OF A UK NATIONAL IN-ORBIT SERVICING FACILITY
Alexandra Gravereaux, Astroscale Ltd, United Kingdom

IAC-19.A6.IP.2
RESEARCH ON COMMERCIAL OPERATION OF SPACE DEBRIS REMOVAL BASED ON LIABILITY INCENTIVES AND ECONOMIC INCENTIVES
Xia Yu, China Academy of Launch Vehicle Technology(CALT), China

IAC-19.A6.IP.3 (withdrawn)
PARALLELIZING RADAR SIGNAL PROCESSING FOR SPACE SITUATIONAL AWARENESS IN THE GESTRA SYSTEM – A HYBRID APPROACH
Christoph Reising, Fraunhofer FHR, Germany

IAC-19.A6.IP.4
GROUND OPERATION EXPERIMENTAL SYSTEM AND OPERATION EXPERIMENT OF SPACE DEBRIS WITH LASERS
Zizheng Gong, Beijing Institute of Spacecraft Environment Engineering, China Academy of Space Technology (CAST), China

IAC-19.A6.IP.5
THE IMPACT OF LARGE CONSTELLATIONS ON SPACE DEBRIS ENVIRONMENT AND ITS COUNTERMEASURES
Zizheng Gong, Beijing Institute of Spacecraft Environment Engineering, China Academy of Space Technology (CAST), China

IAC-19.A6.IP.6
BLOCKCHAIN ENABLED SPACE TRAFFIC AWARENESS (BESTA)
Harvey Reed, The MITRE Corporation, United States

IAC-19.A6.IP.7
DESIGN AND SIMULATIONS OF A PHASED ARRAY FEED FOR THE BIRALET RADAR.
Tonino Pisanu, National Institute for Astrophysics, Italy

IAC-19.A6.IP.8
IMPROVING LEO DEBRIS DRAG PREDICTION BY INFERRING SPIN AXIS
Joseph Carroll, Tether Applications, Inc., United States

IAC-19.A6.IP.9
A LONG-TERM DYNAMICAL EVOLUTION OF LARGE SATELLITE CONSTELLATION AND SPACE DEBRIS PROBLEM
Eduard Kuznetsov, Ural Federal University, Russian Federation

IAC-19.A6.IP.10
RESEARCH ON PATH PLANNING OF FREE-FLOATING SPACE ROBOT BASED ON DUAL MODE SWITCHING
Zhanxia Zhu, National Key Laboratory of Aerospace Flight Dynamics,Northwestern Polytechnical University,Xi'an, China

IAC-19.A6.IP.11
DEEP LEARNING BASED SPACE DEBRIS CAPTURE SCORING STUDY IN ON-ORBIT PROXIMITY OPERATION
Seongmin Lim, Korea University of Science & Technology (UST), Korea, Republic of

IAC-19.A6.IP.12
DESIGN AND TEST OF DRAG AUGMENTATION SYSTEM FOR DE-ORBITING KARDSAT NANO-SATELLITE
Ji-Seok Kim, Korea University of Science & Technology (UST), Korea, Republic of

IAC-19.A6.IP.13
COLLISION RISK ASSESSMENT FOR THE PROPOSED LARGE CONSTELLATIONS
Alexis Petit, IFAC-CNR, Italy

IAC-19.A6.IP.14 (withdrawn)
ENHANCING THE ACCURACY OF THE SPACE OBJECT CATALOG USING MACHINE LEARNING TECHNIQUES
Romain Lucken, France

IAC-19.A6.IP.15
PRELIMINARY STUDY OF ARAMID FIBER CLOTH REMOVING THE SPACE DEBRIS
Fa-wei Ke, China Aerodynamics Research and Development Center (CARDC) , China

IAC-19.A6.IP.16 (withdrawn)
DAMAGE CHARACTERISTICS OF SPACE DEBRIS SHIELDS BY SIMULTANEOUS IMPACTS OF MULTIPLE HIGH-SPEED PROJECTILES
Gongshun Guan, Harbin Institute of Technology, China

IAC-19.A6.IP.17
LPUSAT - 1: A PIONEERING CUBESAT MISSION TO DETECT SMALL SIZED SPACE DEBRIS
Anirudh N Sharma, Lovely Professional University, India

IAC-19.A6.IP.18
MODEL OF ATMOSPHERIC DENSITY GRADIENT TORQUE ACTED ON TIANGONG-1
Hou-Yuan Lin, Purple Mountain Observatory, Chinese Academy of Sciences, China

IAC-19.A6.IP.19 (non-confirmed)
A CONJUNCTION RISK ASSESSMENT OF THE CUBESAT SWARMS IN THE SUN-SYNCHRONOUS ORBIT
Qingbo Gan, National Astronomical Observatories，Chinese Academy of Sciences, China

IAC-19.A6.IP.20
AI TO SUPPORT DECISION MAKING IN COLLISION RISK ASSESSMENT
Luis Sanchez, Univeristy of Strathclyde, United Kingdom

IAC-19.A6.IP.21
SMARTNET AND BACARDI
Hauke Fiedler, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.A6.IP.22
BLOWING SPACE JUNK CLOUDS AWAY: THE COMPLIANCE OF RECOMMENDATIONS TO A SPACE DEBRIS REMOVAL NEW CONCEPT.
Maria Messina, Italian Space Agency (ASI), Italy

A7. IAF SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS

Coordinator(s): Jakob van Zyl, National Aeronautics and Space Administration (NASA), United States; Brent Sherwood, United States; Eric Wille, ESA, The Netherlands;

A7.1. Space Agency Strategies and Plans

October 21 2019, 15:00 — 144A

Co-Chair(s): Jakob van Zyl, National Aeronautics and Space Administration (NASA), United States; Pietro Ubertini, INAF, Italy;
Rapporteur(s): Brent Sherwood, United States;

IAC-19.A7.1.1
PRIORITIES AND PLANS OF THE SPACE STUDIES BOARD OF THE NATIONAL ACADEMIES OF SCIENCES: REPORTS, ROUNDTABLES, AND DECADAL SURVEYS
Colleen Hartman, National Academies of Sciences, Engineering, and Medicine, United States

IAC-19.A7.1.2
BALANCING FAIR REPRESENTATION IN SCIENCE
Carol Christian, STScI, United States

IAC-19.A7.1.3
SVOM: A FRENCH/CHINESE COOPERATION FOR A GRB MISSION
Francois Gonzalez, Centre National d'Etudes Spatiales (CNES), France

IAC-19.A7.1.4
LONG-DURATION VENUS LANDER DEVELOPMENT
Tibor Kremic, NASA Glenn Research Center, United States

IAC-19.A7.1.5
THE FUTURE OF SPACE ASTRONOMY WILL BE BUILT: RESULTS FROM THE NASA-CHARTERED IN-SPACE ASSEMBLED TELESCOPE (ISAT) STUDY
Rudranarayan Mukherjee, Jet Propulsion Laboratory, United States

IAC-19.A7.1.6
THE SEARCH FOR EXOPLANETS: TELESCOPES FOR CHEOPS AND PLATO AND MORE
Alessandro Chierici, Leonardo Spa, Italy

IAC-19.A7.1.7
THE AFRICA2MOON PROGRAMME
Carla Sharpe, SKA South Africa, South Africa

IAC-19.A7.1.8
MODIFICATIONS IN LIGO(LASER INTERFEROMETER GRAVITATIONAL-WAVE OBSERVATORY)
Vishal Singh, University of Petroleum and Energy Studies, India

A7.2. Science Goals and Drivers for Future Exoplanet, Space Astronomy, Physics, and Outer Solar System Science Missions

October 22 2019, 14:45 — 144A

Co-Chair(s): Pietro Ubertini, INAF, Italy; Brent Sherwood, United States;
Rapporteur(s): Eric Wille, ESA, The Netherlands;

IAC-19.A7.2.1
HIGH CONTRAST OBSERVATIONS THE ALPHA CENTAURI SYSTEM AND SEVERAL SHORTCUTS TO IMAGE ANOTHER PALE BLUE DOT
Franck Marchis, SETI Institute, United States

IAC-19.A7.2.2
A HIGH EFFICIENT ATTITUDE REFERENCE POINTING LAW FOR CHINESE "EINSTEIN PROBE" SATELLITE
Jianfeng Deng, Innovation Academy for Microsatellites of CAS, China

IAC-19.A7.2.3
TESTING TECHNOLOGICAL AND ASTRONOMICAL SDSA/SRT CAPABILITIES FOR SOLAR AND NEAR-SUN OBSERVATIONS.
Maria Noemi Iacolina, ASI - Italian Space Agency, Italy

IAC-19.A7.2.4 (withdrawn)
DETECTION OF SOLAR AND JOVIAN RADIO EMISSIONS AT 20.1 MHZ WITH A DECAMETRIC RADIO TELESCOPE ARRAY
Asmaa Alhameed, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-19.A7.2.5
SCIENCE GOALS FOR FUTURE EXPLORATION OF THE HABITABILITY OF THE GASEOUS GIANT PLANETS' SATELLITES
Athena Coustenis, LESIA, France

IAC-19.A7.2.6
COMPARATIVE STUDY OF IMPACT CRATERS ON EARTH AND TITAN USING RADAR
Jahnavi Shah, University of Western Ontario (UWO), Canada

IAC-19.A7.2.7
TITAN INVESTIGATOR
Lizvette Villafana, University of Southern California, United States

IAC-19.A7.2.8
CUBESUB- A SUBMERSIBLE CONCEPT FOR UNDERWATER PLANETARY EXPLORATION
Karishma Inamdar, International Space University, United States

IAC-19.A7.2.9
THE INTERSTELLAR MEDIUM AND OBSERVATION OF NANODIAMONDS
Sabrina Alam, International Space University (ISU), France

IAC-19.A7.2.10
FROST, FAR-INFRARED OBSERVATION SPECTROSCOPY TELESCOPE
Greta De Marco, Politecnico di Milano, Italy

IAC-19.A7.2.11
DARK MATTER NATURE: PROSPECTS FOR FUTURE SCIENCE MISSIONS
Lucia Aurelia Popa, Institute of Space Science, Romania

IAC-19.A7.2.12
CEESA: A HABITABILITY SCORE COMPUTATION APPROACH VALIDATED BY MACHINE LEARNING
Suryoday Basak, University of Texas at Arlington, United States

A7.3. Technology Needs for Future Missions, Systems, and Instruments

October 23 2019, 14:45 — 144A

Co-Chair(s): Jakob van Zyl, National Aeronautics and Space Administration (NASA), United States; Eric Wille, ESA, The Netherlands;
Rapporteur(s): Brent Sherwood, United States;

IAC-19.A7.3.1 (withdrawn)
PLATO (PLANETARY TRANSITS AND OSCILLATION OF STARS) FOCAL PLANE ASSEMBLY: MODELS PHILOSOPHY AND PROTOTYPE TESTS RESULTS.
Isabel Vera, Instituto Nacional de Tecnica Aeroespacial (INTA), Spain

IAC-19.A7.3.2
PLATO SPACECRAFT: OPTICAL BENCH DEMONSTRATOR FOR THE CHARACTERIZATION OF THERMO-ELASTIC STABILITY
Carsten Reese, OHB System AG-Bremen, Germany

IAC-19.A7.3.3 (withdrawn)
PLATO SATELLITE POINTING PERFORMANCE - GUARANTEEING THE SATELLITE PERFORMANCE THROUGHOUT DESIGN EVOLUTIONS APPROACHING SATELLITE PDR
Anneke Monsky, OHB System AG-Bremen, Germany

IAC-19.A7.3.4
IMAGING TERRESTRIAL EXTRASOLAR PLANETS USING SUBMICRON INTERFEROMETRIC PLATFORMS
Collins Ogundipe, Space Exploration and Engineering Group, Carleton Univeristy, Canada

IAC-19.A7.3.5
DESIGN CONCEPTS FOR DESIGNING THE X-IFU CRYOSTAT
Javier Gomez-Elvira, Instituto Nacional de Tecnica Aeroespacial (INTA), Spain

IAC-19.A7.3.6
POLARIMETER FOR HIGH-ENERGY GAMMA-RAY ASTROPHYSICS
Branislav Vlahovic, North Carolina Central University, United States

IAC-19.A7.3.7
PRECISION IN-SPACE MANUFACTURING FOR STRUCTURALLY CONNECTED INTERFEROMETRY
Simon Patané, Made In Space, Inc., United States

IAC-19.A7.3.8
ENVIRONMENTAL DISTURBANCES ON MISSIONS FOR PRECISE TESTS OF RELATIVISTIC GRAVITY AND SOLAR SYSTEM DYNAMICS: THE BEPICOLOMBO CASE
Ivan Di Stefano, Sapienza University of Rome, Italy

IAC-19.A7.3.9
CUBESAT FOR RADIO ASTRONOMY AT LOW FREQUENCIES \\ (CURALF)
Prabhav Manchanda, ASTRON Netherlands Institute for Radio Astronomy, The Netherlands

IAC-19.A7.3.10
AVALANCHE PHOTODIODE ARRAYS FOR LOW-NOISE NEAR-INFRARED IMAGING IN SPACE
James Gilbert, Australian National University (ANU), Australia

IAC-19.A7.3.11
LOW-FREQUENCY OBSERVATIONS USING HIGH-ALTITUDE BALLOON EXPERIMENTS (LOBE)
Raj Thilak Rajan, Delft Institute Of Technology (TU Delft), The Netherlands

IAC-19.A7.3.12
A LOW-POWER CMOS LOW NOISE AMPLIFIER FOR SPACE-BASED LOW-FREQUENCY RADIO ASTRONOMY
Samaneh Babayan, Eindhoven University of Technology, Netherlands Antilles

A7.IP. Interactive Presentations - IAF SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS

October 24 2019, 13:15 — IP Area

Co-Chair(s): Jakob van Zyl, National Aeronautics and Space Administration (NASA), United States;

IAC-19.A7.IP.1 (withdrawn)
COMPLEX CHEMICAL PROFILES IN THE JWST AND ARIEL ERA.
Quentin Changeat, University College London (UCL), United Kingdom

IAC-19.A7.IP.2 (withdrawn)
PREDICTION OF ASTEROID DIAMETER WITH THE HELP OF MULTI-LAYER PERCEPTRON REGRESSOR
VICTOR BASU, India

IAC-19.A7.IP.3
KNOWLEDGE UTILIZATION AND OPEN SCIENCE POLICIES: NOBLE AIMS THAT ENSURE QUALITY RESEARCH OR "ORDERING DISCOVERIES LIKE A PIZZA"?
Julia Heuritsch, Humboldt University of Berlin, Germany

IAC-19.A7.IP.4
RADIO FREQUENCY INTERFERENCE: USING DEEP LEARNING TOOLS TO MITIGATE THE IMPACT TO SPACE OPERATIONS
Zaid Rana, European Space Agency (ESA), Canada

IAC-19.A7.IP.5 (non-confirmed)
VUSE, VU AMSTERDAM UNIVERSITY/EUROMOONMARS 2018/2019 ACTIVITIES: VU SCIENCE EXPERIMENTS AT IGLUNA MOON-ICE SIMULATION HABITAT.
Bram de Winter, VU Amsterdam, The Netherlands

B1. IAF EARTH OBSERVATION SYMPOSIUM

Coordinator(s): Andrew Court, TNO, The Netherlands;

B1.1. International Cooperation in Earth Observation Missions

October 21 2019, 15:00 — 147A

Co-Chair(s): Mukund Kadursrinivas Rao, National Institute of Advanced Studies (NIAS), India; José Gavira Izquierdo, European Space Agency (ESA), The Netherlands;
Rapporteur(s): Brent Smith, National Oceanic and Atmospheric Administration (NOAA), United States;

IAC-19.B1.1.1 (non-confirmed)
KEYNOTE: COMMITTEE ON EARTH OBSERVATION SATELLITES (CEOS): 2019 REPORT OF ACTIVITIES TO THE INTERNATIONAL ASTRONAUTICAL CONGRESS
D.K Das, ISRO, India

IAC-19.B1.1.2
IMPLEMENTATION AND EVOLUTION OF THE SPACE-BASED COMPONENT OF THE WMO INTEGRATED GLOBAL OBSERVING SYSTEM
Werner R. Balogh, World Meteorological Organization (WMO), Switzerland

IAC-19.B1.1.3
INCORPORATING INTERNATIONAL PARTNERSHIPS IN THE FUTURE NOAA SATELLITE OBSERVING SYSTEM ARCHITECTURE
Karen St. Germain, National Oceanic and Atmospheric Administration (NOAA), United States

IAC-19.B1.1.4
A PRELIMINARY EVALUATION OF SENTINEL ASIA IN RESPONSE TO NATURAL DISASTERS IN ASIA PACIFIC REGION
Ming-Chih Cheng, National Applied Research Laboratories, Taipei

IAC-19.B1.1.5 (withdrawn)
THE IMPACT OF INTERNATIONAL COORDINATION ON THE NATIONAL EARTH OBSERVATION POLICY: ANALYZING THE INFLUENCE OF THE GEO'S DATA SHARING PRINCIPLES
Ikuko Kuriyama, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.B1.1.6
INTERNATIONAL COLLABORATION FOR THE EVOLUTION OF A GLOBAL INTEGRATED OBSERVING SYSTEM
Charles Wooldridge, National Oceanic and Atmospheric Administration (NOAA), United States

IAC-19.B1.1.7
COSMIC-2: AN INTERNATIONAL COLLABORATION TO ADVANCE TERRESTRIAL AND SPACE WEATHER REMOTE SENSING
Paul Straus, The Aerospace Corporation, United States

IAC-19.B1.1.8
GLOBAL MONITORING FOR ENVIRONMENT AND SECURITY AND AFRICA – GMES & AFRICA
Oniosun Temidayo Isaiah, Space Generation Advisory Council (SGAC), Nigeria

IAC-19.B1.1.9
APSCO EARTHQUAKE RESEARCH PROJECT: INTEGRATING SATELLITE AND GROUND OBSERVATIONS FOR EARTHQUAKE SIGNATURES AND PRECURSORS IN ASIA-PACIFIC REGION
Manop Aorpimai, Asia-Pacific Space Cooperation Organization (APSCO), China

IAC-19.B1.1.10
NOVASAR-1 - FIRST YEAR OF AN INTERNATIONAL PARTNERSHIP
Pejman Nejadi, Surrey Satellite Technology Ltd (SSTL), United Kingdom

IAC-19.B1.1.11
CURRENT AND NEAR-FUTURE STATE OF SPACE TECHNOLOGY FOR DISASTER SITUATIONS
Emma Velterop, Stanford University, United States

IAC-19.B1.1.12
PARTNERSHIP IN EARTH OBSERVATION: THE CASE OF REGIONAL CENTRES FOR SPACE AND TECHNOLOGY EDUCATION, REGIONAL COMMISSIONS, AND SPACE AGENCIES, TOWARDS DEVELOPING CAPABILITIES AND NEW OPPORTUNITIES TO ADDRESS DEVELOPMENTAL CHALLENGES IN AFRICA
Ganiyu Agbaje, African Regional Centre for Space Science and Technology Education in English, Nigeria

B1.2. Future Earth Observation Systems

October 23 2019, 09:45 — 147A

Co-Chair(s): Timo Stuffler, OHB System AG - Munich, Germany; Alain Gleyzes, CNES, France;
Rapporteur(s): Gunter Schreier, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-19.B1.2.1
PROGRESS ON THE NOAA SATELLITE OBSERVING SYSTEM ARCHITECTURE STUDY AND THE WAY-AHEAD
Karen St. Germain, National Oceanic and Atmospheric Administration (NOAA), United States

IAC-19.B1.2.2
AEOLUS AND THE FUTURE EARTH EXPLORERS OF ESA
Danilo Muzi, ESA - European Space Agency, The Netherlands

IAC-19.B1.2.3
THE MICROCARB PROJECT: AN INITIATIVE FOR A GLOBAL MONITORING OF THE CO2 ATMOSPHERIC CONCENTRATION
Francois BUISSON, Centre National d'Etudes Spatiales (CNES), France

IAC-19.B1.2.4
GRAVITY RECOVERY AND CLIMATE EXPERIMENT FOLLOW-ON MISSION
Frank Webb, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.B1.2.5
TRENDS IN VERY HIGH RESOLUTION EARTH OBSERVATION USING OPTICAL SMALL SATELLITES
Eugene D Kim, Satrec Initiative, Korea, Republic of

IAC-19.B1.2.6
OPERATIONAL STATUS OF SUPER LOW ALTITUDE TEST SATELLITE "TSUBAME/SLATS"
Kazuya Konoue, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.B1.2.7
THE HYPER-ANGULAR RAINBOW POLARIMETER-2 (HARP-2): A WIDE FOV POLARIMETRIC IMAGER FOR HIGH-RESOLUTION SPATIAL AND ANGULAR CHARACTERIZATION OF CLOUD AND AEROSOL MICROPHYSICS
Brent McBride, University of Maryland, Baltimore County (UMBC), United States

IAC-19.B1.2.8
NEW CONCEPT FOR FUTURE EARTH OBSERVATION SYSTEMS
Annamaria Nassisi, Thales Alenia Space Italia, Italy

IAC-19.B1.2.9 (withdrawn)
DEVELOPMENT OF GEOSTATIONARY INTERFEROMETRIC MICROWAVE SOUNDER (GIMS) IN PREPARING FOR CHINA'S FY-4M MISSION
Cheng Zhang, Chinese Academy of Sciences, China

IAC-19.B1.2.10
INTERFEROMETRY-BASED ORBIT OBSERVATION FOR GEOSYNCHRONOUS SYNTHETIC APERTURE RADAR (GEOSAR) MISSIONS
Jorge Nicolas-Alvarez, Universitat Politecnica de Catalunya (UPC), Spain

IAC-19.B1.2.11
COSMO-SKYMED DI SECONDA GENERAZIONE NON-STANDARD OPERATIONAL MODES
Luca Fasano, Italian Space Agency (ASI), Italy

IAC-19.B1.2.12
NEW SMALL SAR-ENABLED SATELLITE CONCEPT TO SUPPORT EARLY WARNING FOR FAST-DEVELOPING EVENTS
Inês Castelão, Tekever, Portugal

B1.3. Earth Observation Sensors and Technology

October 23 2019, 14:45 — 147A

Co-Chair(s): Andrew Court, TNO, The Netherlands; Roland Le Goff, SODERN, France;

IAC-19.B1.3.1
SPEXONE READY FOR MANUFACTURING
Marc Oort, Airbus Defence and Space Netherlands, The Netherlands

IAC-19.B1.3.2
THE PRISMA PAYLOAD AND PRODUCTS – PRELIMINARY RESULTS OF COMMISSIONING PHASE
Marco Faraci, Leonardo S.p.A., Italy

IAC-19.B1.3.3
SPACE-BASED ALTIMETRY: THE PATH TO DATE AND FUTURE PROSPECTS
Faviola Romero, Thales Alenia Space, France

IAC-19.B1.3.4
DESIGN OF HIGH-RESOLUTION SWIR AND MWIR SENSORS FOR OIL AND WATER LEAK DETECTION FROM A SMALL MODULAR LEO SATELLITE
Alberto Rubio Blanes, TU Graz (ESA), The Netherlands

IAC-19.B1.3.5
IMAGE QUALITY ENHANCEMENT AND VERIFICATION OF SUPERVIEW-1 COMMERCIAL REMOTE SENSING CAMERA
Jiang Haibin, CAST, China

IAC-19.B1.3.6
INTERNATIONAL SPACE STATION HYPERSPECTRAL EARTH IMAGING SYSTEM TRIAL
Dan Katz, United States

IAC-19.B1.3.7
TECHNOLOGY CHALLENGES OF THE METIMAGE OPTICS
Etienne Renotte, Advanced Mechanical and Optical Systems (AMOS), Belgium

IAC-19.B1.3.8
TUNABLE MID-WAVE INFRARED SPECTRAL FILTERS BASED ON PHASE CHANGE MATERIALS FOR MULTISPECTRAL IMAGING
Matthew Julian, National Institute of Aerospace, United States

IAC-19.B1.3.9
THE DELFT DEPLOYABLE SPACE TELESCOPE PROJECT
JM (Hans) Kuiper, Delft University of Technology (TU Delft), The Netherlands

IAC-19.B1.3.10
AN ASSESSMENT OF DROUGHT IN NORTHERN NIGERIA USING SPATIOTEMPORAL REMOTE SENSING DATA
Henry Ibitolu, Glasgow Caledonian University, United Kingdom

IAC-19.B1.3.11
PROPOSAL FOR A SIPM-BASED COSMIC RAY DETECTOR FOR USE ON SUBORBITAL AND ORBITAL FLIGHTS
Juan Carlos Sánchez, Universidad Nacional Autónoma de México, Mexico

B1.4. Earth Observation Data Management Systems

October 24 2019, 09:45 — 147A

Co-Chair(s): James E. Graf, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Gunter Schreier, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;
Rapporteur(s): Annamaria Nassisi, Thales Alenia Space Italia, Italy;

IAC-19.B1.4.1
AI-BASED OCEAN INFORMATION MINING FROM LARGE SATELLITE REMOTE SENSING DATA SET
Xiaofeng Li, NOAA/NESDIS, United States

IAC-19.B1.4.2 (non-confirmed)
CLOUD-BASED GROUND SEGMENT ARCHITECTURE FOR DATA-INTENSIVE SPACE MISSIONS
Victor Loke, National University of Singapore, Singapore, Republic of

IAC-19.B1.4.3
FLUROSENSE: POWERING AGRONOMIC DECISIONS WITH THE FUSION OF REMOTE SENSING AND AGRICULTURAL DATA
Anastasiia Volkova, Monash University, Australia

IAC-19.B1.4.4
FROM THE SKY TO THE CROWD: INTEGRATING GEOSPATIAL BIG DATA FOR DECISION-MAKING
Carolynne Hultquist, The Pennsylvania State University, United States

IAC-19.B1.4.5
SPACE DATA PROVIDER NODES MANAGEMENT PLATFORM FOR DISASTER RESPONSE
Wasanchai Vongsantivanich, Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand

IAC-19.B1.4.6
RAPID ACCESS PLANNING SYSTEM (RAPS) WEB APPLICATION FOR COLLECTION PLANNING
Ella Herz, Orbit Logic, United States

IAC-19.B1.4.7
A NEW TECHNICAL APPROACH FOR PRESERVATION OF YOUR MISSION DATA
Mike Kearney, Space Infrastructure Foundation, United States

IAC-19.B1.4.8 (withdrawn)
THE DATA MANAGEMENT STRATEGY AND THE IMPLEMENTATION FOR THE GROUND SEGMENT
JOOHO PARK, Korea Aerospace Research Institute (KARI), Korea, Republic of

B1.5. Earth Observation Applications, Societal Challenges and Economic Benefits

October 25 2019, 13:30 — 147A

Co-Chair(s): Masami Onoda, Japan Aerospace Exploration Agency (JAXA), Japan; Na Yao, Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology (CAST), China; Annamaria Nassisi, Thales Alenia Space Italia, Italy;
Rapporteur(s): Wolfgang Rathgeber, European Space Agency (ESA), Italy;

IAC-19.B1.5.1
LEVERAGING THE EXPERTISE OF A SPACE AGENCY AND A DEVELOPMENT AGENCY TO INCREASE IMPACT OF EARTH OBSERVATION IN THE DEVELOPING WORLD
Daniel Irwin, NASA Marshall Space Flight Center, United States

IAC-19.B1.5.2
ASSESSING THE SOCIAL, ECONOMIC AND ENVIRONMENTAL BENEFITS DERIVED FROM EARTH OBSERVATION-BASED SERVICES ALONG A VALUE CHAIN: A USE-CASE DRIVEN APPROACH
Christopher Oligschlager, European Association of Remote Sensing Companies, Belgium

IAC-19.B1.5.3
FROM SURVEILLANCE TO SCIENCE: EVALUATING MODELS FOR CIVIL USE OF U.S. NATIONAL SECURITY SATELLITE DATA
Mariel Borowitz, Georgia Institute of Technology, United States

IAC-19.B1.5.4
CHALLENGES AND BENEFITS OF SPACE TECHNOLOGIES APPLICATION IN THE INTEGRATED MARITIME SURVEILLANCE: THE EUCISE2020 PROJECT
Patrizia Sacco, Italian Space Agency (ASI), Italy

IAC-19.B1.5.5
"DIS-AGGREGATING" EO IMAGES AND SPATIAL DATA IN A SPATIAL ANALYTICS MODEL FOR FARMER'S AGRICULTURAL ADVISORY AT PLOT LEVEL
Mukund Kadursrinivas Rao, National Institute of Advanced Studies (NIAS), India

IAC-19.B1.5.6
CROP ACREAGE ESTIMATION FOR RICE IN INDIA USING SENTINEL-1 (SAR) IMAGERY AND RANDOM FOREST ALGORITHM
Adhithya S Rajan, Earth2Orbit Analytix, India

IAC-19.B1.5.7
MULTITEMPORAL FOREST DEGRADATION ASSESSMENT IN THE AMAZON RAINFOREST THROUGH L-BAND AND OPTICAL DATA
Claudia Arantes Silva, University of Brasilia, Brazil

IAC-19.B1.5.8
IMPACT OF NATIONAL DISASTER MANAGEMENT PRACTICES ON THE PROGRESSIVE USE OF SATELLITE AIDED TOOLS FOR DISASTER RESPONSE AND MANAGEMENT IN DEVELOPING COUNTRIES.
PATRICIA KHWAMBALA, Cape Peninsula University of Technology (CPUT), South Africa

IAC-19.B1.5.9
SATELLITE TECHNOLOGY TO REDUCE FINANCIAL LOSSES CAUSED BY THE CLIMATE CHANGE EFFECTS IN MEXICO
Brenda Vanessa Ortega Flores, ATOMX Education, Mexico

IAC-19.B1.5.10
EARTH OBSERVATION TECHNOLOGY APPLIED TO COASTAL WATER ECOSYSTEMS IN WEST AFRICA
Ufuoma Ovienmhada, Massachusetts Institute of Technology (MIT), United States

IAC-19.B1.5.11
OVERVIEW OF KHALIFASAT MISSION APPLICATIONS
Saeed Al Mansoori, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-19.B1.5.12
USE TO AI TO ANALYSE EARTH OBSERVATION DATA TO DELIVER MORE TIMELY INFORMATION TO DECISION-MAKERS
James Parr, Frontier Development Lab, United Kingdom

B1.6. 50 years of Earth observation: The contribution to sustainable development goals and plans for the future

October 25 2019, 09:45 — 144C

Co-Chair(s): Harry A. Cikanek, National Oceanic and Atmospheric Administration (NOAA), United States; Elizabeth Seward, Airbus Defence and Space Ltd, United Kingdom;
Rapporteur(s): Brent Smith, National Oceanic and Atmospheric Administration (NOAA), United States;

IAC-19.B1.6.1 (non-confirmed)
KEYNOTE: 50 YEARS OF EARTH OBSERVATIONS: THE CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS AND PLANS FOR THE FUTURE
Lawrence Friedl, National Aeronautics and Space Administration (NASA), United States

IAC-19.B1.6.2
15 YEARS OF SERVIR: APPLICATIONS OF EARTH OBSERVATIONS TOWARD ACHIEVING GLOBAL ENVIRONMENTAL SUSTAINABILITY
Kelsey Herndon, University of Alabama in Huntsville, United States

IAC-19.B1.6.3
EARTH OBSERVATION USES TO SUPPORT COUNTRIES IN ACHIEVING THE GLOBAL GOALS
Argyro Kavvada, Booz Allen Hamilton, United States

IAC-19.B1.6.4
APPLICATIONS OF SATELLITE EARTH OBSERVATIONS TO FOREST MANAGEMENT IN BENIN AND GHANA IN SUPPORT OF SUSTAINABLE DEVELOPMENT GOAL 15
Danielle Wood, Massachusetts Institute of Technology (MIT), United States

IAC-19.B1.6.5
EARTH OBSERVATION FOR SUSTAINABLE DEVELOPMENT IN AFRICA: THROUGH THE ADOPTION OF COST-EFFECTIVE SMALL SATELLITE PROGRAMS TO ATTAIN DATA DEMOCRACY AND ACHIEVE SUSTAINABLE DEVELOPMENT GOALS IN AFRICA
Julius Kimani, Kenya

IAC-19.B1.6.6
EARTH OBSERVATION AS A TOOL TO HALT DEFORESTATION: A CASE STUDY IN BRAZIL
Renata Knittel Kommel, Space Policy Institute, George Washington University, United States

IAC-19.B1.6.7
SPATIO-TEMPORAL EVALUATION OF SURFACE URBAN HEAT ISLAND INTENSITY AND LAND USE DYNAMICS ACROSS HIGHLY DENSE CITIES IN NIGERIA: TOWARDS SUSTAINABLE URBAN PLANNING IN LAGOS, KANO AND IBADAN CITIES.
Henry Ibitolu, Glasgow Caledonian University, United Kingdom

IAC-19.B1.6.8
CONTRIBUTION OF SATELLITE IMAGERY TOWARDS SUSTAINABLE URBANIZATION AND HUMAN SETTLEMENT PLANNING AND MANAGEMENT - SOUTH AFRICA- CASE STUDY
Naledzani Mudau, South African National Space Agency (SANSA), South Africa

IAC-19.B1.6.9 (non-confirmed)
SPACE TECHNOLOGY AND INTELLIGENT MODELS FOR BIODIVERSITY MONITORING IN AZERBAIJAN
Sevda R. Ibrahimova, Azerbaijan National Aerospace Agency, Azerbaijan

IAC-19.B1.6.10
ECONOMIC DEVELOPMENT CHARTER
Charles Stotler, University of Mississippi School of Law, United States

IAC-19.B1.6.11 (withdrawn)
THE CONTRIBUTION OF SPACE APPLICATIONS TO FOOD SECURITY: AN ASSESSMENT OF EARTH OBSERVATION, EARLY WARNING SYSTEMS AND THEIR USE BY DEVELOPING COUNTRIES
Aylin-Sophie Hasenbein, RWTH Aachen University, Germany

IAC-19.B1.6.12
APPLICATION OF SPACE TECHNOLOGIES FOR AGRICULTURAL DEVELOPMENT IN AFRICA: AN APPROACH IN LINE WITH THE SUSTAINABLE DEVELOPMENT GOALS OF THE UNITED NATIONS
Nicole Villanueva Justino, Pontifical Catholic University of Peru, Peru

B1.IP. Interactive Presentations - IAF EARTH OBSERVATION SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Andrew Court, TNO, The Netherlands; Harry A. Cikanek, National Oceanic and Atmospheric Administration (NOAA), United States;

IAC-19.B1.IP.1
A NEW FLOOD MAPPING SERVICE FROM OPERATIONAL POLAR AND GEOSTATIONARY ORBITING SATELLITES.
Mitchell Goldberg, NOAA/NESDIS, United States

IAC-19.B1.IP.2
A NOVEL SAR FORMATION TARGETS RECOGNITION ALGORITHM USING TOPOLOGY STRUCTURE
Hao Wang, National Key Laboratory of Science and Technology on Aerospace Intelligence Control, Beijing Aerospace Automatic Control Institute, China

IAC-19.B1.IP.3
CALIBRATION OF MULTI-CHANNEL MILLIMETER-WAVE RADIOMETERS OF GEOSYNCHRONOUS FY-4M USING BRIGHTNESS TEMPERATURE OF THE LUNAR SURFACE AT MILLIMETER CHANNELS DERIVED FROM LRO IR AND CHANG'E MICROWAVE DATA
Ya-Qiu Jin, Fudan University, China

IAC-19.B1.IP.4
AUTOMATIC SHIP DETECTION FROM HIGH RESOLUTION SATELLITE IMAGES BASED ON A DEEP CONVOLUTIONAL NEURAL NETWORK (DCNN) MODEL
Saeed Al Mansoori, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-19.B1.IP.5
MICROWAVE OBSERVATIONS OF MESOSPHERIC OZONE LOSS OVER ANTARCTICA ASSOCIATED WITH PARTICLE PRECIPITATION
Elise Wright Knutsen, National Aeronautics and Space Administration (NASA), United States

IAC-19.B1.IP.6
RADIOPHYSICAL RELATIVISTIC GRAVIMETER
Sergiy Matviyenko, JSC "RPC "KURS", Ukraine

IAC-19.B1.IP.7
INITIAL CALIBRATION AND VALIDATION RESULTS OF KHALIFASAT IMAGES
Asmaa AlJanaahi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-19.B1.IP.8 (withdrawn)
OPTIMIZATION OF SPACECRAFT IMAGE COLLECTION PLANNING AND SCHEDULING PROBLEM
Himani Saini, Indian Space Research Organization (ISRO), India

IAC-19.B1.IP.9
DATA MANAGEMENT AND STEWARDSHIP MATURITY MATRIX SUPPORTING DATA CURATOR
Luca Fasano, Italian Space Agency (ASI), Italy

IAC-19.B1.IP.10
SMALL SATELLITES AND UAV: A COLLABORATION FOR BETTER DEVELOPMENT IN EARTH OBSERVATION ACTIVITIES IN AFRICA
Abraham Akinwale, Space Generation Advisory Council (SGAC), Nigeria

IAC-19.B1.IP.11
HEURISTIC SCHEDULING FOR MULTI-AGILE SATELLITE BASED ON ADAPTIVE GENETIC ALGORITHM
Lili Ren, National Key Laboratory of Aerospace Flight Dynamics,Northwestern Polytechnical University,Xi'an, China

IAC-19.B1.IP.12
MONITORING AND PREDICTING THE LAND USE AND LAND COVER CHANGES FROM MULTI-TEMPORAL DUBAISAT-2 DATA USING REMOTE SENSING AND GIS TECHNIQUES – A CASE STUDY OF AL MARMOOM DESERT CONSERVATION RESERVE
Shaikha AlBesher, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-19.B1.IP.13
HYPERSPECTRAL IMAGE CLASSIFICATION USING DEEP CONVOLUTIONAL NEURAL NETWORK
Ruiguang Hu, Beijing Aerospace Automatic Control Institute, China

IAC-19.B1.IP.14
THE USE OF VIRTUAL GROUND STATION TO SUPPORT MIDDLE AND HIGH SCIENCE EDUCATION IN INDIA
Anirudh N Sharma, Lovely Professional University, India

IAC-19.B1.IP.15 (withdrawn)
UNDERSTANDING DRIVERS OF NATURAL CLIMATE VARIABILITY
Liz Najman, Stony Brook University, United States

IAC-19.B1.IP.16
ATMOSPHERIC STUDY & ITS IMPACT ON LITHIUM-ION BATTERIES
Saeed Alhadhrami, United Arab Emirates

IAC-19.B1.IP.17 (withdrawn)
A METHOD FOR OBJECT SEGMENTATION IN LOW-RESOLUTION IMAGES BASED ON MASK R-CNN
Ting Da, Xi'an Microelectronics Technology Institute, China
Aerospace Science and Technology Corporation (CASC), China

B2. IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM

Coordinator(s): Manfred Wittig, European Space Agency (ESA), retired, The Netherlands; Rita Lollock, The Aerospace Corporation, United States;

B2.1. Advanced Technologies for Space Communications

October 21 2019, 15:00 — 140A

Co-Chair(s): Edward W. Ashford, Graz University of Technology (TU Graz), Austria; Elemer Bertenyi, Canadian Aeronautics and Space Institute, Canada;
Rapporteur(s): Nader Alagha, ESA, The Netherlands;

IAC-19.B2.1.1
OPTICAL PAYLOAD DESIGN FOR A SMALL SATELLITE LASER COMMUNICATIONS
Daria Stepanova, German Orbital Systems GmbH, Germany

IAC-19.B2.1.2
LASER COMMUNICATIONS FOR CUBESATS: A 50 MBPS LASER/RADIO HYBRID TRANSCEIVER IN A PC-104 FORM FACTOR CARD
Ronnie Nader, Ecuadorian Civilian Space Agency (EXA), Ecuador

IAC-19.B2.1.3
CURL PLASMA ANTENNA FOR SATCOM NAVIGATION SYSTEMS
Paola De Carlo, University of Padova, Italy

IAC-19.B2.1.4
2-IN-1 SMART PANELS: EMBEDDING PHASED ARRAY PATCH ANTENNAS WITHIN SATELLITE STRUCTURES
Valorie Platero, University of Manitoba, Canada

IAC-19.B2.1.5
OPTIMIZATION OF SATELLITE COMMUNICATION LINK BY DIGITAL BEAM FORMING IN GROUND STATIONS
Usman Shehryar, Pakistan Space and Upper Atmosphere Research Commission, Pakistan

IAC-19.B2.1.6
USING MOBILITY PREDICTION TO ENHANCE NETWORK ROUTING IN LEO CROSSLINK NETWORK
William Su, The Aerospace Corporation, United States

IAC-19.B2.1.7
PREDICTIVE ALGORITHMS TO ASSESS INTER-SATELLITE LINKS AVAILABILITY IN AUTONOMOUS SATELLITE NETWORKS
Joan Adrià Ruiz de Azúa Ortega, Universitat Politecnica de Catalunya (UPC BarcelonaTech), Spain

IAC-19.B2.1.8
A FAULT DETECTION STRATEGY FOR SATELLITE CLUSTERS BASED ON ROBUST PRINCIPAL COMPONENT ANALYSIS
Yulun LI, National Space Science Center (NSSC), Chinese Academy of Sciences, China

IAC-19.B2.1.9
ON THE USE OF MACHINE LEARNING FOR FLEXIBLE PAYLOAD MANAGEMENT IN VHTS SYSTEMS
Flor G. Ortiz-Gomez, Universidad Politécnica de Madrid, Spain

IAC-19.B2.1.10
POLAR CODING FOR FORWARD ERROR CORRECTION IN SPACE COMMUNICATIONS WITH LDPC COMPARISONS
Naveed Naimipour, National Aeronautics and Space Administration (NASA), United States

IAC-19.B2.1.11 (withdrawn)
RF COMMUNICATION SYSTEM CONCEPTS FOR SMALL SATELLITE FORMATION FLYING MISSIONS
Andreas Freimann, University of Würzburg, Germany

IAC-19.B2.1.12
A GLOBAL, DECENTRALISED, SPACE COMMUNICATIONS NETWORK BASED ON DISTRIBUTED LEDGER TECHNOLOGY (DLT)
Pavlo Tanasyuk, University of Cambridge, United Kingdom

IAC-19.B2.1.13
USING BIT FLIPS AS A SOURCE OF RANDOMNESS IN CUBESAT COMMUNICATION ENCRYPTION
Melvin Mathews, University of British Columbia, Canada

B2.2. Advanced Space Communications and Navigation Systems

October 22 2019, 14:45 — 140A

Co-Chair(s): Morio Toyoshima, National Institute of Information and Communications Technology (NICT), Japan; Amane Miura, National Institute of Information and Communications Technology (NICT), Japan;
Rapporteur(s): Debra Emmons, The Aerospace Corporation, United States;

IAC-19.B2.2.1
FUTURE TECHNOLOGY MEETS NEW COMMUNICATION STRATEGIES - THE HEINRICH HERTZ SATELLITE MISSION
Bent Ziegler, OHB System AG-Bremen, Germany

IAC-19.B2.2.2
PRELIMINARY DESIGN RESULTS OF ENGINEERING TEST SATELLITE 9 COMMUNICATIONS MISSION: FOR VERIFICATION OF NEXT GENERATION HTS COMMUNICATIONS TECHNOLOGY
Amane Miura, National Institute of Information and Communications Technology (NICT), Japan

IAC-19.B2.2.3
CRITICAL DESIGN RESULTS OF ENGINEERING TEST SATELLITE 9 COMMUNICATIONS MISSION: FOR HIGH-SPEED LASER COMMUNICATION, "HICALI" MISSION
Yasushi MUNEMASA, National Institute of Information and Communications Technology (NICT), Japan

IAC-19.B2.2.4
SPACE QUANTUM COMMUNICATIONS PROGRAMS AT THE ITALIAN SPACE AGENCY
Paolo Villoresi, Università degli Studi di Padova, Italy

IAC-19.B2.2.5
MACHINE LEARNING ALGORITHMS FOR ERROR CORRECTION IN SPACE OPTICAL COMMUNICATIONS SYSTEMS
Naveed Naimipour, National Aeronautics and Space Administration (NASA), United States

IAC-19.B2.2.6
NSLSAT1, HIGH GAIN, DEPLOYABLE KA-BAND COMMUNICATION PAYLOAD, SYSTEM AND PERFORMANCE
Raz Shani, NSL, Israel

IAC-19.B2.2.7
FEASIBILITY ANALYSIS OF OPTICAL COMMUNICATION SYSTEM FOR A MOON ORBITING CUBESAT AND EARTH STATION
Femi Ishola, Laboratory of Spacecraft Environment Interaction Engineering, Kyushu Institute of Technology Japan, Japan

IAC-19.B2.2.8
DEVELOPMENT AND TESTING OF A LED-BASED OPTICAL DATA LINK FOR THE LEDSAT CUBESAT
Andrea Gianfermo, Sapienza University of Rome, Italy

IAC-19.B2.2.9
DESIGN OF A HIGH-GAIN MICROSTRIP PATCH ANTENNA ARRAY WITH STRIPLINE COMBINERS FOR PASSIVE REFLECTOMETRY
Andreas Johann Hörmer, Graz University of Technology (TU Graz), Austria

IAC-19.B2.2.10
NAVIGATION APPLICATIONS OF SPACE BASED ADS-B INFORMATION
Dirk-Roger Schmitt, DLR (German Aerospace Center), Germany

IAC-19.B2.2.11 (withdrawn)
A TRADESPACE EXPLORATION OF SATELLITE SYSTEMS TO OFFER CONNECTIVITY TO UNCONNECTED AND UNDERSERVED COMMUNITIES
Inigo del Portillo, Massachusetts Institute of Technology (MIT), United States

IAC-19.B2.2.12 (withdrawn)
RELATIVE NAVIGATION OF SATELLITE SWARMS
Raj Thilak Rajan, Delft Institute Of Technology (TU Delft), The Netherlands

B2.3. Fixed and Broadcast Communications

October 23 2019, 09:45 — 140A

Co-Chair(s): Robert D. Briskman, Sirius XM Radio, United States; Laszlo Bacsardi, Hungarian Astronautical Society (MANT), Hungary;
Rapporteur(s): Desaraju Venugopal, Devas Multimedia Pvt. Ltd., India;

IAC-19.B2.3.1
ACM ALGORITHMS WITH PERFORMANCE OPTIMIZATION FOR Q/V BAND SATELLITE LINKS
Luca Rizzo, University of Rome - Tor Vergata, Italy

IAC-19.B2.3.2
DUAL REFLECTOR ANTENNA WITH A CIRCULARLY POLARIZED RECONFIGURABLE REFLECTARRAY AS SUBREFLECTOR
Marzieh Mehri Dehnavi, Ecole Polytechnique de Montreal, Canada

IAC-19.B2.3.3
L-, X/KU-, AND KA-BAND REFLECTIVE MESH FOR LARGE DEPLOYABLE REFLECTOR SUBSYSTEMS
Marina Ploeckl, HPS GmbH, Germany

IAC-19.B2.3.4 (withdrawn)
A FEASIBILITY ANALYSIS OF SMALL SATELLITE CONSTELLATIONS DEDICATED TO SERVE A COUNTRY OR REGION WITH HIGH SPEED CONNECTIVITY
Alan Mattos, Agencia Boliviana Espacial, Bolivia

IAC-19.B2.3.5
NODE 1: A NEW HIGH PERFORMANCE 5G COMMUNICATIONS SYSTEM FOR NANOSATELLITES
Diego Favarolo, United States

IAC-19.B2.3.6
LAUNCH VEHICLE OPTIMIZED FOR CERTAIN LEO/VLEO SATELLITES AND CONSTELLATONS
Robert D. Briskman, Sirius XM Radio, United States

IAC-19.B2.3.7
PERFORMANCE OF LEO SATELLITE BASED OFDM TRANSMISSION SYSTEM IN A MARITIME ENVIRONMENT
Aimal Siraj, void inc., Japan

IAC-19.B2.3.8
FACSAT1 GROUND STATION PERFORMANCE
Henry Jimenez Rosero, Servicio Nacional De Aprendizaje (SENA), Colombia

IAC-19.B2.3.9
A NEW HIGH PERFORMANCE STAR TRACKER FOR SPACECRAFT
Emil Tchilian, Ball Aerospace, United States

IAC-19.B2.3.10
INTEGRATION OF SUPPLEMENTARY PAYLOADS INTO A NON-DEDICATED NANOSATELLITE BUS FOR SPECTRUM ANALYSIS ON-BOARD SALSAT
Michael Pust, Technische Universität Berlin, Germany

IAC-19.B2.3.11
EFFICIENT POWER ALLOCATION FOR PROFITS MAXIMIZATION IN DIGITAL CHANNELIZED SATCOM SYSTEMS
Shuai Wang, Tsinghua University, China

IAC-19.B2.3.12
IP LINK MODEL FOR INDUSTRIAL SATELLITE COMMUNICATION
Marco Schmidt, Bochum University of Applied Sciences, Germany

IAC-19.B2.3.13 (withdrawn)
RESOURCE ALLOCATION IN NGSO SATELLITE CONSTELLATION NETWORK CONSTRAINED BY INTERFERENCE PROTECTION TO GEO SATELLITE NETWORK
Ting Li, Tsinghua University, China

B2.4. Mobile Satellite Communications and Navigation Technology

October 23 2019, 14:45 — 140A

Co-Chair(s): Joe M. Straus, The Aerospace Corporation, United States; Peter Buist, European GNSS Agency (GSA), The Netherlands;
Rapporteur(s): Attila Matas, Switzerland;

IAC-19.B2.4.1
MDASAT – A NANOSATELLITE CONSTELLATION TO IMPROVE THE SOUTH AFRICAN MARITIME DOMAIN AWARENESS CAPABILITY
Francois Visser, Cape Peninsula University of Technology (CPUT), South Africa

IAC-19.B2.4.2
RUBIDIUM PULSED OPTICALLY PUMPED CLOCK FOR NAVIGATION SATELLITES
Alessandro Chierici, Leonardo Spa, Italy

IAC-19.B2.4.3
LIGHTWEIGHT DEPLOYABLE X/KU-BAND ANTENNA FOR LAND-MOBILE SATELLITE COMMUNICATION
Marina Ploeckl, HPS GmbH, Germany

IAC-19.B2.4.4
NEXT GENERATION HYBRID SATELLITE-5G NETWORKS
YAO QIAN, Chinese Society of Astronautics (CSA), China

IAC-19.B2.4.5
THE EVOLUTIONS OF THE GALILEO RETURN LINK SERVICE
Antonio Rolla, European Commission, Belgium

IAC-19.B2.4.6
ANALYZING THE SOIL CONDITION FOR THE AGRICULTURE USING GNSS
Yasith Lakmal, Space Generation Advisory Council (SGAC), Sri Lanka

IAC-19.B2.4.7
THE TARDIS EXPERIMENT: AN INNOVATIVE VOR-BASED SYSTEM FOR HAPS BACKUP POSITIONING AND ATTITUDE DETERMINATION
Veronica Bandini, Sapienza University of Rome, Italy

IAC-19.B2.4.8
INNOVATIVE TRACKING SYSTEMS TEST ON-BOARD A STRATOSPHERIC BALLOON: THE STRAINS EXPERIMENT
Paolo Marzioli, Sapienza University of Rome, Italy

IAC-19.B2.4.9
AUTOMATED RELATIVE STATE DETERMINATION IN A MULTI-SATELLITE ARRAY USING GPS WITH NO GROUND STATIONS
Rochelle Mellish, United States

IAC-19.B2.4.10
SINGLE-SATELLITE REAL-TIME POSITIONING OF BALLOON AND HELICOPTER FOR AERIAL EXPLORATION IN EXTRATERRESTRIAL ATMOSPHERE
Kar-Ming Cheung, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.B2.4.11
INTEGRITY ENHANCEMENT METHOD FOR AIRBORNE MULTI-SENSOR ASSISTED SATELLITE NAVIGATION LANDING SYSTEM
Peng Lyu, Tianjin 764 Communication Navigation Technology Co., Ltd., China

B2.5. Advanced Satellite Services

October 24 2019, 09:45 — 140A

Co-Chair(s): K.R. Sridhara Murthi, NIAS, India; Otto Koudelka, Graz University of Technology (TU Graz), Austria;
Rapporteur(s): Enrique Pacheco Cabrera, Incomspace, Mexico;

IAC-19.B2.5.1
NEW SATELLITE TECHNOLOGIES PROVIDE THE GEOGRAPHIC UBIQUITY NEEDED TO CONNECT THE GLOBE, BENEFITTING THE SDGS, 5G, AND THE DIGITAL DIVIDE.
Ruth Pritchard-Kelly, Oneweb, United Kingdom

IAC-19.B2.5.2
EDRS-C – THE SECOND NODE OF THE EUROPEAN DATA RELAY SYSTEM IS IN ORBIT
Diego Calzolaio, OHB System AG-Bremen, Germany

IAC-19.B2.5.3
THE ROLE FOR EARTH OBSERVATION AND IOT INTEGRATION IN THE FUTURE MANAGEMENT OF WATER UTILITY "SMART GRID" INFRASTRUCTURE
Anna Burzykowska, ESA, Italy

IAC-19.B2.5.4 (withdrawn)
POTENTIAL FUTURE DEEP SPACE COMMUNICATION TECHNOLOGIES
Rashi Mishra, TU Berlin, Germany

IAC-19.B2.5.5
THE PERFORMACE ANALYSIS OF DTN COMMUNICATION SYSTEMS IN MOON EXPLORATION PROGRAM.
Inkyu Kim, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.B2.5.6
SINGLE-SATELLITE REAL-TIME RELATIVE POSITIONING FOR MOON AND MARS
Kar-Ming Cheung, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.B2.5.7
TRUSTED NODE SATELLITE-QKD CONSTELLATIONS WITH INTER-SATELLITE LINKS
Tom Vergoossen, SpeQtral, Singapore, Republic of

IAC-19.B2.5.8
IMPLEMENTATION OF FRACTAL ANTENNA IN NANOSATELLITES FOR PROVIDING INTERNET SERVICES TO RURAL SCHOOLS IN MEXICO
José Enrique Prieto Díaz, ATOMX Education, Mexico

IAC-19.B2.5.9 (withdrawn)
DESIGN OF A DETACHABLE ANTENNA SYSTEM FOR NANO SATELLITE GROUND STATION
Devaraju Ramakrishna, Dayananda Sagar University, India

IAC-19.B2.5.10
SUCCESSFUL SMART MATERIAL FOR SATELLITE ANTENNA
Srilakshmi U Sirurmath, R V College of Engineering, Bengaluru, India

IAC-19.B2.5.11
STATUS AND DEVELOPMENT OF GNSS SATELLITE-GROUND COORDINATED OPERATION
Dongxia Wang, Beijing Satellite Navigation Center, China

IAC-19.B2.5.12 (non-confirmed)
THE DEVELOPMENT OF WIRELESS COMMUNICATION TECHNOLOGY IN THE AEROCRAFT APPLICATION
Juan Lu, Beijing Institute of Aerospace Systems Engineering, China

IAC-19.B2.5.13
VISION-BASED ESTIMATION OF DYNAMICS FOR SPACE DEBRIS WITHOUT INERTIAL MOMENTS KNOWN
Jing Yuan, Aerospace Flight Dynamics Laboratory,Northwestern Polytechnical University,Xi'an,China, China

B2.6. Space-Based Navigation Systems and Services

October 24 2019, 14:45 — 140A

Co-Chair(s): Kristian Pauly, OHB System, Germany; Giovanni B. Palmerini, Sapienza University of Rome, Italy;
Rapporteur(s): Norbert Frischauf, TU Graz, Austria;

IAC-19.B2.6.1
STATUS OF THE GALILEO SERVICES, EUROPE'S GNSS PROGRAMME
Rodrigo da Costa, European GNSS Agency (GSA), Czech Republic

IAC-19.B2.6.2
ANALYSIS OF GALILEO TECHNICAL INNOVATIONS ENABLING SUSTAINABLE FUTURE SPACE TRAFFIC MANAGEMENT
Gabriele Impresario, Agenzia Spaziale Italiana (ASI), Italy

IAC-19.B2.6.3
TRACKING ALL SATELLITES: ADDING TIME-SYNCHRONIZATION TO EACH GROUNDSTATION IN A NETWORK DURING POST-PROCESSING BY APPLYING DATA FUSION OF SIGNALS AND TIME-SOURCES
Andreas Hornig, University of Stuttgart, Germany

IAC-19.B2.6.4
ARCHITECTURE DESIGN OF AN ITAR-FREE ALTERNATIVE-TO-GNSS NAVIGATION SYSTEM FOR ASSURED PNT
Giovanni Mattei, Northrop Grumman Aerospace Systems, Italy

IAC-19.B2.6.5
SPACECRAFT NAVIGATION USING PHASE TRACKING OF X-RAY PULSAR SIGNALS
Kevin Anderson, University of Maryland, College Park, United States

IAC-19.B2.6.6 (non-confirmed)
ORBIT AND CLOCK ESTIMATION OF IRNSS USING INDIAN NAVIC RECEIVER
Venkata Vighnesam Narayanasetti, India

IAC-19.B2.6.7
METRIC TRACKING SERVICES IN THE ERA OF OPTICAL COMMUNICATIONS
Gregory Heckler, National Aeronautics and Space Administration (NASA), United States

IAC-19.B2.6.8
A SIGNAL PROCESSING APPROACH TO GNSS PRECISE POSITIONING FOR LUNAR EXPLORATION
Priyanka Das Rajkakati, ISAE-Supaero University of Toulouse, France

IAC-19.B2.6.9
COVERAGE OF THE LUNAR SURFACE BY SATELLITES ON HALO ORBITS AND DISTANT RETROGRADE ORBITS
Zhao-Yang Gao, Nanjing University, China

IAC-19.B2.6.10
POSITIONING FOR EARTH'S SURFACE CRUISER WITH THE VISION INFORMATION BY SINGLE SATELLITE
Chen Xu, Northwestern Polytechnical University;National Key Laboratory of Aerospace Flight Dynamics, China

B2.7. Near-Earth and Interplanetary Communications

October 25 2019, 09:45 — 140A

Co-Chair(s): Ramon P. De Paula, National Aeronautics and Space Administration (NASA), United States; Dipak Srinivasan, The John Hopkins University Applied Physics Laboratory, United States;
Rapporteur(s): Sara AlMaeeni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates;

IAC-19.B2.7.1
TELECOMMUNICATION DESIGN AND ANALYSIS FOR THE EUROPA LANDER MISSION
Alessandra Babuscia, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.B2.7.2
IMPROVEMENTS IN BEPICOLOMBO AND JUICE RADIO SCIENCE EXPERIMENTS WITH A MULTI-STATION TRACKING CONFIGURATION FOR THE REDUCTION OF DOPPLER NOISE
Andrea Di Ruscio, Sapienza University of Rome, Italy

IAC-19.B2.7.3
THE BENEFITS OF DELAY/DISRUPTION TOLERANT NETWORKING (DTN) FOR FUTURE NASA SCIENCE MISSIONS
David Israel, NASA, United States

IAC-19.B2.7.4
ANALYTICAL TECHNIQUES FOR ASSESSING GATEWAY AND OTHER SPACECRAFT ANTENNA LINE-OF-SIGHT
William Kennedy, Booz Allen Hamilton, United States

IAC-19.B2.7.5
HIGH DATA-RATE INTER-SATELLITE LINK (ISL) FOR SPACE-BASED INTERFEROMETRY
Visweswaran Karunanithi, Technical University of Delft/Innovative Solutions In Space.BV, Delft, The Netherlands

IAC-19.B2.7.6
COMMUNICATION INTEROPERABILITY FOR LUNAR MISSIONS
Sandra Johnson, National Aeronautics and Space Administration (NASA), United States

IAC-19.B2.7.7
A HIGH-PERFORMANCE LOW-COST COMMUNICATIONS SYSTEM FOR SMALL LEO SATELLITES
Otto Koudelka, Graz University of Technology (TU Graz), Austria

IAC-19.B2.7.8
MODULAR COMMUNICATION SUBSYSTEMS FOR LOW EARTH ORBIT SATELLITES
Oilid Bouzekri, TU Graz, United Kingdom

IAC-19.B2.7.9
AN APPROACH FOR CLASSIFICATION OF RF SPECTRUM DATA ON-BOARD THE NANOSATELLITE SALSAT
Jens Großhans, Technische Universität Berlin, Germany

IAC-19.B2.7.10
OPTICAL COMMUNICATIONS FEASIBILITY STUDY FOR SCIENCE MISSIONS LOCATED AT SUN-EARTH LAGRANGIAN POINT L2
Kendall Mauldin, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States

IAC-19.B2.7.11
CONCEPTS FOR UTILIZATION OF QUANTUM COMMUNICATIONS AND QUANTUM KEY DISTRIBUTION
Harry Shaw, NASA GSFC, United States

IAC-19.B2.7.12
OVERVIEW OF NASA'S NATIONAL SPACE QUANTUM LABORATORY PROGRAM
Scott Hamilton, MIT Lincoln Laboratory, United States

IAC-19.B2.7.13
ADVANCED INTERPLANETARY COMMUNICATION ARCHITECTURE
Eric Reinthal, PTScientists, Germany

B2.8-GTS.3. Space Communications and Navigation Global Technical Session

October 22 2019, 09:45 — 147B

Co-Chair(s): Kevin Shortt, Germany; Stephanie Wan, Space Generation Advisory Council (SGAC), United States;
Rapporteur(s): Eric Wille, ESA, The Netherlands;

IAC-19.B2.8-GTS.3.1 (withdrawn)
THE TECHNOLOGICAL AWARENESS OF GNSS - EDUCATION AND ADOPTION IN SOCIETY
Joshua Critchley-Marrows, NSL, United Kingdom

IAC-19.B2.8-GTS.3.2
MARTIAN GPS -CUBESAT BASED GLOBAL POSITIONING SYSTEM FOR MARS
Siddhesh Naik, India

IAC-19.B2.8-GTS.3.3
PERFORMANCE EVALUATION ON AUTONOMOUS TIME SYNCHRONIZATION OF NAVIGATION CONSTELLATION
Jie Xin, Engineer, China

IAC-19.B2.8-GTS.3.4
SPECTRUM POLICY FOR SPACE RADIOCOMMUNICATION SYSTEMS
Brian Ramsay, The MITRE Corporation, United States

IAC-19.B2.8-GTS.3.5 (non-confirmed)
ATTITUDE DETERMINATION AND CONTROL SYSTEM DESIGN FOR A MODULAR SMALL SATELLITE PLATFORM FOR EARTH OBSERVATION
Bastian Morawitz, Graz University of Technology (TU Graz), Germany

IAC-19.B2.8-GTS.3.6
USING A QUANTUM TRACKER TO VERIFY THE GEOGRAPHICAL POSITION OF A DATASET
Máté Galambos, Budapest University of Technology and Economics, Hungary

IAC-19.B2.8-GTS.3.7 (withdrawn)
UHF CHANNEL AND INTERFERENCE BETWEEN LEO SATELLITES AND RECEIVERS IN THE ARCTIC
Gara Quintana Díaz, Norwegian University of Science and Technology, Norway

IAC-19.B2.8-GTS.3.8 (withdrawn)
OPTIMISATION OF COMMUNICATIONS CONNECTIVITY USING AI
James Parr, Frontier Development Lab, United Kingdom

IAC-19.B2.8-GTS.3.9
HOW INTERNET OF THINGS (IOT) WILL SHAPE THE ASIA-PACIFIC ECONOMY?
Pratiwi Kusumawardani, Space Generation Advisory Council (SGAC), Indonesia

B2.IP. Interactive Presentations - IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Manfred Wittig, European Space Agency (ESA), retired, The Netherlands; Rita Lollock, The Aerospace Corporation, United States;

IAC-19.B2.IP.1 (withdrawn)
CREATING HUMAN-POWERED GROUNDSTATIONS BASED AROUND MODERN SMARTPHONE ARCHITECTURE FOR LOW-COST SATELLITE MISSIONS AND EDUCATIONAL OUTREACH
Hugh Carrigg, Australia

IAC-19.B2.IP.2
DESIGN, FABRICATION AND CHARACTERIZATION OF A K BAND REFLECTARRAY ANTENNA FOR USE IN A CUBESAT APPLICATION
Didier Goulet-Tran, Polytechnique Montreal, Canada

IAC-19.B2.IP.3
AN INTEGRATED SOFTWARE DEFINED RADIO AND BEAM-TRACKING ANTENNA FOR LAUNCH VEHICLES
Tayo Shonibare, C6 Launch Systems, Canada

IAC-19.B2.IP.4
DESIGN OF A FULL DUPLEX CUBESAT COMMUNICATIONS SYSTEM FOR AMATEUR RADIO OPERATION
Sawyer Rempel, University of Manitoba, Canada

IAC-19.B2.IP.5
DEEP LEARNING TECHNIQUES APPLIED TO MONOCULAR CAMERA FOR DEPTH AND NORMAL MAPS ESTIMATION ON A LUNAR LANDING SCENARIO.
Alix LEROY, Cranfield University, United Kingdom

IAC-19.B2.IP.6 (withdrawn)
A SPACE TARGETS VISUAL LOCALIZATION METHOD FOR ON-ORBIT SPACECRAFTS BASED ON NEURAL NETWORK
Yue-Jiao Wang, Xi'an Microelectronics Technology Institute, China
Aerospace Science and Technology Corporation (CASC), China

IAC-19.B2.IP.7
DESIGN AND DEVELOP THE SWARM AI FLYING ROBOTS/ DRONES (SPACE WINGS) INTEGRATING WITH AI ROVER FOR THE SURVEILLANCE, NAVIGATION, MAPPING AND COLLECTING DATA
SANDYA RAO, India

IAC-19.B2.IP.8
EVENTECH EVENT TIMER FOR SPACE APPLICATIONS
Pavels Razmajevs, Latvia

IAC-19.B2.IP.9 (withdrawn)
INFLUENCE ANALYSIS OF DOPPLER AND COMPENSATION FOR THE RANGING PERFORMANCE OF TEST EQUIPMENT OF NON-COHERENT TT&C TRANSPONDERS
Keyuan Yang, China Academy of Space Technology (CAST), China

IAC-19.B2.IP.10
KALMAN FILTERING FOR SINS/GNSS INTEGRATED NAVIGATION OF LONG RANGE CRUISING VEHICLES
Jixin Li, Luoyang Optoelectro Technology Development Center, China

IAC-19.B2.IP.11
BASIC NAVIGATION MESSAGE PARAMETERS COMPARISON BETWEEN BDS2 AND BDS3
Jie Xin, Engineer, China

B3. IAF HUMAN SPACEFLIGHT SYMPOSIUM

Coordinator(s): Kevin D. Foley, The Boeing Company, United States; Igor V. Sorokin, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation; Peter Batenburg, Netherlands Space Society (NVR), The Netherlands;

B3.1. Governmental Human Spaceflight Programs (Overview)

October 21 2019, 15:00 — 151A

Co-Chair(s): Sam Scimemi, National Aeronautics and Space Administration (NASA), United States; Juergen Schlutz, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;
Rapporteur(s): Rainer Willnecker, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-19.B3.1.1 (non-confirmed)
KEYNOTE: NASA'S MOON TO MARS EXPLORATION PLANS
Ken Bowersox, National Aeronautics and Space Administration (NASA), United States

IAC-19.B3.1.2
JAXA'S INITIATIVE ON HUMAN SPACEFLIGHT PROGRAM FOR ISS AND BLEO
Fumiya Tsutsui, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.B3.1.3
CANADA AND THE INTERNATIONAL SPACE STATION PROGRAM: OVERVIEW AND STATUS SINCE IAC 2018
Katia Belley, Canadian Space Agency, Canada

IAC-19.B3.1.4
BRIEF INTRODUCTION OF FACILITIES AND RESEARCH PLANNING OF CHINA SPACE STATION
PEI HAN, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, China

IAC-19.B3.1.5
SELECTING THE UAE'S FIRST ASTRONAUT: CHALLENGES AND RECOMMENDATIONS
Mariam Al Zarouni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-19.B3.1.6 (withdrawn)
FOUNDATION OF POLISH HUMAN SPACEFLIGHT PROGRAM IN COLLABORATION BETWEEN GOVERNMENT AND COMMERCIAL COMPANIES.
Matt Harasymczuk, Analog Astronaut Training Center, Poland

IAC-19.B3.1.7
THE LATEST ON THE POWER AND PROPULSION ELEMENT: FIRST ELEMENT OF THE LUNAR GATEWAY
Michele Gates, NASA Headquarters, United States

IAC-19.B3.1.8
NASA'S HUMAN LUNAR LANDING STRATEGY
Greg Chavers, NASA Marshall Space Flight Center, United States

IAC-19.B3.1.9
HUMAN LUNAR MISSION DESIGN: THEN & NOW
Nujoud Merancy, National Aeronautics and Space Administration (NASA), United States

B3.2. Commercial Human Spaceflight Programs

October 22 2019, 09:45 — 151A

Co-Chair(s): Sergey K. Shaevich, Khrunichev State Research & Production Space Center, Russian Federation; Michael W. Hawes, Lockheed Martin Corporation, United States; Michael E. Lopez Alegria, MLA Space, LLC, United States;
Rapporteur(s): Gene Rice, RWI - Rice Wigbels Int'l, United States;

IAC-19.B3.2.1
HUMAN SPACEFLIGHT CONTINUITY AND THE INTERNATIONAL SPACE STATION
Sam Scimemi, National Aeronautics and Space Administration (NASA), United States

IAC-19.B3.2.2
COMMERCIAL SPACEFLIGHT BEYOND LOW EARTH ORBIT
Alexander G. Derechin, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation

IAC-19.B3.2.3
MISSION CONTROL CENTER TO SUPPORT COMMERCIAL SPACE MISSIONS AND PASSENGER'S ACTIVITIES INSIDE OF THE CABIN
Taichi Yamazaki, Japan

IAC-19.B3.2.4
SPACE EXCURSIONIST (SE) TRAINING FOR SPACEFLIGHT
Andrey Kuritsin, Gagarin Cosmonaut Training Center, Russian Federation

IAC-19.B3.2.5
DEVELOPMENT OF A NOVEL SPACE MEDICINE REVIEW FRAMEWORK TO FACILITATE SAFE PUBLIC ACCESS TO SUBORBITAL SPACEFLIGHTS
Kwasi Nkansah, International Space University (ISU), Canada

IAC-19.B3.2.6
MEDICAL GUIDELINES FOR COMMERCIAL HUMAN SPACEFLIGHT: A REVIEW
Shawna Pandya, University of Saskatchewan, Canada

IAC-19.B3.2.7
FUTURE COMMERCIAL HUMAN SPACE PROGRAM FOR PEOPLE WITH LOWER LIMB DISABILITIES
Shunsuke Miyazaki, University of Houston, United States

IAC-19.B3.2.8
HUMAN SPACEFLIGHT MISSION ASSURANCE IN AN EVOLVING COMMERCIAL LANDSCAPE
Timothy Riley, Embry Riddle Aeronautical University Worldwide, United States

IAC-19.B3.2.9
PREPARING THE ATLAS V ROCKET FOR HUMAN SPACEFLIGHT
Daniel Adams, United Launch Alliance, United States

IAC-19.B3.2.10
THE INTERACTION OF INDUSTRY AND SCIENCE IN ANALOG AND ON-BOARD EXPERIMENTS AS A POTENTIAL FOR CREATING COMMERCIAL INNOVATIONS
Anna Kussmaul, Russian Federation

IAC-19.B3.2.11
SPACESHIPTWO: A SUBORBITAL VEHICLE FOR HUMAN SPACEFLIGHT AND MICROGRAVITY RESEARCH
Sirisha Bandla, Virgin Galactic L.L.C, United States

IAC-19.B3.2.12
INVESTMENT DECISION MODEL FOR A COMMERCIALLY OWNED AND OPERATED SPACE STATION IN LOW EARTH ORBIT
George Lordos, Massachusetts Institute of Technology (MIT), United States

B3.3. Utilization & Exploitation of Human Spaceflight Systems

October 22 2019, 14:45 — 151A

Co-Chair(s): Cristian Bank, Eumetsat, Germany; Eleanor Morgan, United States;

IAC-19.B3.3.1
IMPACT OF THE INTERNATIONAL SPACE STATION RESEARCH RESULTS
Ousmane Diallo, National Aeronautics and Space Administration (NASA), United States

IAC-19.B3.3.2
THE UNITED NATIONS, DELIVERING 'ACCESS TO SPACE FOR ALL': ACTIVITY STATUS IN 2019
Aimin NIU, United Nations Office for Outer Space Affairs, Austria

IAC-19.B3.3.3
PRELIMINARY PLANNING AND POLICY PROPOSALS OF SCIENCE AND APPLICATION FOR THE CHINA'S SPACE STATION OPERATION
Jin Ba, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, China

IAC-19.B3.3.4
COLUMBUS INFRASTRUCTURE UTILIZATION BEYOND 2020
STEFAN PETSCHELT
Stefan Petschelt, Airbus DS GmbH, Germany

IAC-19.B3.3.5
MAJOR ENGINEERING ACHIEVEMENTS AT EXECUTION OF RUSSIAN RESEARCH PROGRAM ABOARD THE ISS TO SUPPORT FUTURE EXPLORATION MISSIONS
Igor V. Sorokin, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation

IAC-19.B3.3.6
FIRST RESULTS FROM THE GERMAN-RUSSIAN ICARUS SYSTEM FOR ANIMAL TRACKING FROM ISS
Johannes Weppler, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.B3.3.7
LESSONS LEARNED FROM DEVELOPING AND OPERATING MISSE - THE FIRST EXTERNAL, COMMERCIAL TESTING FACILITY IN SPACE
Mark Gittleman, Alpha Space Test & Research Alliance, LLC, United States

IAC-19.B3.3.8
SPACEQUEST – CURRENT STATUS OF THE EXPERIMENT ON TESTING GRAVITATION EFFECT ON QUANTUM ENTANGLEMENT ON THE ISS
Norbert M.K. Lemke, OHB System AG - Munich, Germany

IAC-19.B3.3.9
NASA'S GATEWAY: A DESCRIPTION AND ANALYSIS OF SCIENTIFIC CAPABILITIES AND POTENTIAL
Alexander Burg, Bryce Space and Technology, United States

IAC-19.B3.3.10
INTERNATIONAL SPACE STATION, DEEP SPACE GATEWAY AND FUTURE COMMERCIAL STATIONS AS PLATFORMS FOR MICRO AND SMALL SAT ASSEMBLY, FUELING AND REFUELING
James Bultitude, Orbit Fab, United States

IAC-19.B3.3.11 (withdrawn)
CREWED SERVICING MISSIONS TO SPACE OBSERVATORIES IN LAGRANGIAN POINT ORBITS
Irina Kovalenko, Space Research Institute (IKI), Russian Academy of Sciences (RAS), Russian Federation

IAC-19.B3.3.12
BARTOLOMEO EXTERNAL PLATFORM ENTERING INTO COMMERCIAL SERVICE
Christian Steimle, Airbus Defence and Space, Germany

IAC-19.B3.3.13
EXTENSION OF MULTIPLE ARTIFICIAL-GRAVITY RESEARCH SYSTEM
Yukako KAGAMI, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.B3.3.14
INNOVATIVE APPROACHES TO USING THE INTERNATIONAL SPACE STATION AS A MARS TRANSIT HABITAT ANALOG
Julie A. Robinson, National Aeronautics and Space Administration (NASA), United States

B3.4-B6.4. Flight & Ground Operations of HSF Systems - Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia

October 23 2019, 09:45 — 151A

Co-Chair(s): Dieter Sabath, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Annamaria Piras, Thales Alenia Space Italia, Italy;

Rapporteur(s): Thomas A.E. Andersen, Danish Aerospace Company ApS, Denmark;

IAC-19.B3.4-B6.4.1
FAST RENDEZVOUS PROFILES' EVOLUTION: FROM THE ISS TO THE LUNAR STATION
Rafail Murtazin, Rocket Space Corporation Energia, Russian Federation

IAC-19.B3.4-B6.4.2
NASA SEXTANT MISSION OPERATIONS ARCHITECTURE
Wayne Yu, National Aeronautics and Space Administration (NASA), United States

IAC-19.B3.4-B6.4.3
AVIONICS ON THE INTERNATIONAL SPACE STATION: AN UPDATE
Paul Muri, NASA, United States

IAC-19.B3.4-B6.4.4
DATA MANAGEMENT SYSTEM OF THE RUSSIAN COMPUTER: 20 YEARS OF FAULT TOLERANT COMPUTER OPERATION, CONTINUOUS SUSTAINING MAINTENANCE AND OVERCOME OF OBSOLESCENCE ISSUES
Kai Burmeister, Airbus Defence & Space, Space Systems, Germany

IAC-19.B3.4-B6.4.5
STATUS OF THE ADVANCED LIFE SUPPORT SYSTEM ACLS - INSTALLATION, COMMISSIONING AND OPERATION ON ISS
Carlos Redondo, Airbus Defence and Space, Germany

IAC-19.B3.4-B6.4.6
EXPERIMENTAL RESULTS OF CONTROLLING AN ANTHROPOMORPHOUS ROBOT WITH PARTICIPATION OF COSMONAUTS IN THE INTERESTS OF DEEP SPACE EXPLORATION
Andrey Kuritsin, Gagarin Cosmonaut Training Center, Russian Federation

IAC-19.B3.4-B6.4.7
INCREMENT 56/57 ISS EVENTS PUT FOCUS ON SAFETY ROLE OF THE COLUMBUS FLIGHT DIRECTOR.
Jérôme Campan, Deutsch Luft und Raumfahrt Zentrum (DLR), Germany

IAC-19.B3.4-B6.4.8
SPACE STATION EMERGENCY PLANNING AND MANAGEMENT UNDER TYPICAL RESUPPLY FAILURES
Chenglan Liu, International Space University, France

IAC-19.B3.4-B6.4.9
LUNA 2.0 - CONSIDERATIONS FOR AN EUROPEAN GROUND SEGMENT FOR ESA'S AND DLR'S TEST BED FOR EXPLORATION
Thomas Mueller, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.B3.4-B6.4.10
CONCEPT OF OPERATIONS FOR SUSTAINING A LONG TERM LARGE CREW MISSION PERFORMING ISRU AND EXPERIMENTS ON THE LUNAR SURFACE
Lorenzo Marchino, Politecnico di Torino, Italy

IAC-19.B3.4-B6.4.11
LOGISTICS IN HUMAN SPACEFLIGHT SYSTEMS
Christoph Pott, TU Dortmund University, Germany

IAC-19.B3.4-B6.4.12
ROLE OF NASA HEADQUARTERS SPACE OPERATIONS CENTER IN MISSION AWARENESS, CONTINGENCIES, AND EXTERNAL ENGAGEMENT
Kevin Metrocavage, NASA, United States

B3.5. Astronaut Training, Accommodation, and Operations in Space

October 23 2019, 14:45 — 151A

Co-Chair(s): Igor V. Sorokin, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation; Alan T. DeLuna, ATDL Inc., United States;

Rapporteur(s): Keiji Murakami, Japan Aerospace Exploration Agency (JAXA), Japan;

IAC-19.B3.5.1
ASTRONAUT ROUNDTABLE
Alan T. DeLuna, ATDL Inc., United States

IAC-19.B3.5.2
LESSONS FROM THE SPACE STATIONS
Gary Kitmacher, National Aeronautics and Space Administration (NASA), United States

IAC-19.B3.5.3
ASSESSING ISS ASTRONAUT HABITABILITY TRAINING: A HISTORICAL PERSPECTIVE
Tiffany Swarmer, KBRwyle, United States

IAC-19.B3.5.4
EXPERIENCE IN TRAINING COSMONAUTS FOR VISUAL INSTRUMENTAL OBSERVATIONS FROM THE ISS USING THE FLYING LABORATORY
Andrey Kuritsin, Gagarin Cosmonaut Training Center, Russian Federation

IAC-19.B3.5.5
ENHANCING CREW TRAINING FOR EXPLORATION MISSIONS: THE WEKIT EXPERIENCE
Liliana Ravagnolo, Altec S.p.A., Italy

IAC-19.B3.5.6
ENABLING ASTRONAUT AUTONOMY THROUGH AUGMENTED REALITY
Eswar Anandapadmanaban, MIT, United States

IAC-19.B3.5.7
IMMERSIVE MIXED REALITY CAPABILITIES FOR PLANNING AND EXECUTING EXPLORATION EXTRAVEHICULAR ACTIVITY
Kara Beaton, KBRwyle, United States

IAC-19.B3.5.8
USE OF VIRTUAL REALITY FOR ASTRONAUT TRAINING IN FUTURE SPACE MISSIONS - SPACECRAFT PILOTING FOR THE LUNAR ORBITAL PLATFORM - GATEWAY (LOP-G)
Miquel Bosch Bruguera, Institute of Space Systems, Universität Stuttgart, Germany

B3.7. Advanced Systems, Technologies, and Innovations for Human Spaceflight

October 24 2019, 14:45 — 151A

Co-Chair(s): Michele Gates, NASA Headquarters, United States; Sebastien Barde, Centre National d'Etudes Spatiales (CNES), France;
Rapporteur(s): Gi-Hyuk Choi, Korea Aerospace Research Institute (KARI), Korea, Republic of;

IAC-19.B3.7.1
KEYNOTE: FROM LEO TO THE MOON, MARS, AND BEYOND: SHAPING CAPABILITY DEVELOPMENT STRATEGIES FOR NASA'S HUMAN EXPLORATION CAMPAIGN
Kathleen Boggs, National Aeronautics and Space Administration (NASA), United States

IAC-19.B3.7.2
ARCHITECTURAL ANALYSIS OF THE GATEWAY
Daniel Pütz, Technical University of Munich, Germany

IAC-19.B3.7.3
NEXTSTEP HABITAT RISK REDUCTION FOR GATEWAY
Michael Ching, National Aeronautics and Space Administration (NASA) / Stellar Solutions Inc, United States

IAC-19.B3.7.4
ESPRIT XENON REFUELING SYSTEM: A VITAL TECHNOLOGY BUILDING BLOCK FOR THE GATEWAY AND FUTURE MISSIONS
Mathias Rohrbeck, OHB System AG-Bremen, Germany

IAC-19.B3.7.5
LUNAR LANDER INTEGRATION WITH GATEWAY
Xavier Simon, The Boeing Company, United States

IAC-19.B3.7.6
PRECISION REAL TIME LOCATION SYSTEM FOR ASTRONAUTS: A SMART SYSTEM TO LOCATE ASSETS IN SPACE HABITATS
Bryan Perez Ramirez, Facultad de Ingeniería-UNAM, Mexico

IAC-19.B3.7.7
EXPERIMENTAL INVESTIGATION OF CARBON NANOTUBE DUST MITIGATION SYSTEM FOR HABITAT STRUCTURES
Kavya K. Manyapu, The Boeing Company, United States

IAC-19.B3.7.8
WASTE FOR ENERGY AND VOLUME RECOVERY (WEVR) USING INDUCTIVELY HEATED PLASMA GENERATOR
Samuel Anih, University of Cape Town, South Africa

IAC-19.B3.7.9
SIRONA - SUSTAINABLE INTEGRATION OF REGENERATIVE OUTER-SPACE NATURE & AGRICULTURE
Heather Hava, University of Colorado Boulder, United States

IAC-19.B3.7.10
DEVELOPMENT AND TESTING OF ENVIRONMENTAL CONTROL AND LIFE SUPPORT SYSTEMS FOR DEEP SPACE HABITATS
Stefan Tomovic, University of North Dakota, United States

IAC-19.B3.7.11
A COMMERCIAL EXTRA-VEHICULAR ACTIVITY SPACE SUIT SYSTEM
Theodore Southern, Final Frontier Design, United States

IAC-19.B3.7.12
ENABLING TECHNOLOGIES FOR MORE EFFICIENT AND SAFE EXTRAVEHICULAR ACTIVITIES ON ROCKY PLANETARY SURFACES
Hady Ghassabian Gilan, Space Exploration Project group, Space Generation Advisory Council (SGAC), Italy

IAC-19.B3.7.13
A FEASIBILITY STUDY OF AN ARTIFICIAL GRAVITY SYSTEM CONCEPT
Christopher Andrea Paissoni, Politecnico di Torino, Italy

B3.8-GTS.2. Human Spaceflight Global Technical Session

October 25 2019, 09:45 — 147B

Co-Chair(s): Guillaume Girard, Zero2infinity, Spain; Andrea Jaime, OHB System AG - Munich, Germany;

IAC-19.B3.8-GTS.2.1
COMPREHENSIVE SYSTEM SIMULATION OF EXTRAVEHICULAR ACTIVITIES IN SUPPORT OF EXPLORATION SYSTEM DEVELOPMENT
Claas Olthoff, USRA, United States

IAC-19.B3.8-GTS.2.2
OPERATING A SPACE GREENHOUSE FOR 12 MONTHS IN ANTARCTICA
Paul Zabel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.B3.8-GTS.2.3
DESIGNING A MARTIAN GREENHOUSE AS A HABITABLE SPACE: FEASIBILITY STUDIES AND DESIGN APPROACH
Mahsa Moghimi Esfandabadi, University of Houston, United States

IAC-19.B3.8-GTS.2.4
DMF: DEPLOYABLE MODULAR FRAME FOR INFLATABLE SPACE HABITATS
Vittorio Netti, Sasakawa International Center for Space Architecture, Italy

IAC-19.B3.8-GTS.2.5
HUMAN SPACEFLIGHT PERFORMANCE: BOOTSTRAPPING THE INTERSECTION OF BIOMETRICS AND ARTISTIC EXPRESSION THROUGH PLANETARY MISSION ANALOGUE EVAS
Sarah Jane Pell, ESA Topical Team Arts & Science, Australia

IAC-19.B3.8-GTS.2.6 (withdrawn)
TECHNOLOGY-MEDIATED HUMAN-PLANT INTERACTION AS A PSYCHOLOGICAL COUNTERMEASURE IN MANNED SPACE MISSIONS
Georgios Profitiliotis, National Technical University of Athens, Greece

IAC-19.B3.8-GTS.2.7 (non-confirmed)
DELIVERING MORE HUMAN INTO SPACE: UAE HUMAN SPACE FLIGHT REGULATIONS
Sumaya AlHajeri, UAE Space Agency, United Arab Emirates

IAC-19.B3.8-GTS.2.8
ARCHITECTURE AND SPACE SYSTEMS DESIGN OF MARINA: AN ORBITAL SPACE HOTEL
Matthew Moraguez, Massachusetts Institute of Technology (MIT), United States

IAC-19.B3.8-GTS.2.9
CRADLE- CALIFORNIA RESEARCH ANALOG FOR DEEPSPACE AND LUNAR ENVIRONMENTS
Poonampreet Kaur Josan, CRADLE Corp., United States

B3.IP. Interactive Presentations - IAF HUMAN SPACEFLIGHT SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Peter Batenburg, Netherlands Space Society (NVR), The Netherlands;

IAC-19.B3.IP.1
ADJUSTABLE IVA SPACESUIT ERGONOMICS – UPPER BODY MOTION ENVELOPE REFERENCE MODEL
Ondrej Doule, Florida Institute of Technology, United States

IAC-19.B3.IP.2
AN EYE ON THE HORIZON: ANALOG MARS ROVER LOCALIZATION AND ASTRONAUT DETECTION
Bradley Hoffmann, University of North Dakota, United States

IAC-19.B3.IP.3
ASTRONAUT RESILIENCE TRAINING FOR THE FUTURE MANNED SPACE MISSION
Yumi Ohama, Japan Manned Space Systems Corporation (JAMSS), Japan

IAC-19.B3.IP.4 (non-confirmed)
LUNAR LABS FOR A MINIMUM VIABLE HABITAT. STRATEGIC DE-RISKING BY DESIGN, FOR COMPLEX INNOVATION, CO-CREATION AND STARTUP PROGRAMS, BY THE EXAMPLE OF A GLOBAL TECHNOLOGY PROGRAM FOR LUNAR HABITATION IN COOPERATION WITH NASA.
Marc C Lange, Germany

IAC-19.B3.IP.5
EXPERIENCE FROM A FOUR CREW MARS SIMULATION MISSION:A POSSIBLE INVESTIGATION FOR FUTURE SPACEFLIGHT MISSION
Sonal Baberwal, France

IAC-19.B3.IP.6 (non-confirmed)
RESEARCH ON THE APPLICATION AND EXPANSION OF TIANZHOU CARGO SPACECRAFT
Zhang Zhenhua, China

IAC-19.B3.IP.7
THE COMMERCIAL SPACE INVOICE: HOW DOES THE GENERAL PUBLIC AFFORD FUTURE SPACE PARTICIPATION?
Yvette Marie Gonzalez, Moon Village Association (MVA), United States

B4. 26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS

Coordinator(s): Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), United Kingdom; Jian Guo, Delft University of Technology (TU Delft), The Netherlands;
Support(s): Rhoda Shaller Hornstein, United States;

B4.1. 20th Workshop on Small Satellite Programmes at the Service of Developing Countries

October 22 2019, 09:45 — 151B

Co-Chair(s): Sias Mostert, Space Commercial Services Holdings (Pty) Ltd, South Africa; Hui Du, United Nations Office for Outer Space Affairs, Austria;
Rapporteur(s): Danielle Wood, Massachusetts Institute of Technology (MIT), United States; Pierre Molette, France; Sergei Chernikov, United Nations Office for Outer Space Affairs, Austria;

IAC-19.B4.1.1
JOURNEY OF A KOREAN SMALL SATELLITE COMPANY: FROM SPACE TECHNOLOGY RECIPIENT TO DONOR
Sungdong Park, Satrec Initiative, Korea, Republic of

IAC-19.B4.1.2
SMALL SATELLITES IN SUPPORT OF THE OUTER SPACE TREATY AND HUMAN RIGHTS PROTECTION IN EMERGING COUNTRIES
Annette Froehlich, LL.M., MAS, European Space Policy Institute (ESPI)German Aerospace Center (DLR), Austria

IAC-19.B4.1.3
MAXIMIZING THE BENEFITS OF SMALL SATELLITE PROGRAMS IN AFRICA
Oniosun Temidayo Isaiah, Space Generation Advisory Council (SGAC), Nigeria

IAC-19.B4.1.4
EGYPT'S HISTORICAL ROLE IN THE ADVANCEMENT OF SPACE SCIENCES AND AN AUDACIOUS ROADMAP FOR THE FUTURE OF THE EGYPTIAN SPACE PROGRAM DESPITE MAJOR SETBACKS
Mina Takla, CosmoX, Russian Federation

IAC-19.B4.1.6
TECHNOLOGY TRANSFER AND CAPACITY BUILDING FOR COLOMBIA'S SPACE PROGRAM BY MEANS OF SMALL SATELLITES.
Giovanni Corredor, Comision Colombiana del Espacio, Colombia

IAC-19.B4.1.7
THE IMPACT OF THE SUDANESE 1ST CUBESAT PROJECT, KN-SAT1
Yasir ABBAS, Kyushu Institute of Technology, Japan

IAC-19.B4.1.8
STUDY AND SELECTION OF SATELLITE IMAGES OF NANO SATELLITES FOR THE AGRICULTURAL FIELD IN BOLIVIA
Rosalyn Puma-Guzman, Bolivia

IAC-19.B4.1.9
1KUNS-PF AFTER ONE YEAR OF FLIGHT: NEW RESULTS FOR THE IKUNS PROGRAMME
Vivian Otieno, Sapienza University of Rome, Kenya

IAC-19.B4.1.10
OVERVIEW OF PAST, PRESENT AND FUTURE BRAZILIAN SMALL SATELLITES MISSIONS
Leonardo Souza, Universidade de Brasília, Brazil

IAC-19.B4.1.11
IMPLEMENTING SMALL SATELLITE TECHNOLOGIES TO FORMULATE INDUSTRIAL POLICY IN LATIN AMERICA REGION BASED IN THE UN-AGENDA 2030.
Yair Israel Piña López, Universidad Nacional Autónoma de México, Mexico

IAC-19.B4.1.12
THE DEVELOPMENT OF A SMALLSAT PLATFORM FOR IR EARTH OBSERVATION FOR CIVIL USERS IN MEXICO
Saul Santilllan- Gutierrez, Facultad de Ingeniería-UNAM, Mexico

IAC-19.B4.1.13
MORAZÁN MRZ-SAT CUBESAT PROJECT FOR INTEGRATION OF THE CENTRAL AMERICAN NATIONS THROUGH COLLABORATION IN SPACE
Maria Molina, University of Costa Rica, Costa Rica

IAC-19.B4.1.14
AN INSPIRING EARTH OBSERVATION MISSION OF TURKEY, GÖKTÜRK-2; NEW OPPORTUNITY FOR SPACE APPLICATION COMMUNITY
Tamer Özalp, Turkey

IAC-19.B4.1.19
HOW SEVEN EMERGING NATIONS ENTERED THE SPACE AGE VIA BIRDS PROJECTS 1 THROUGH 4
George Maeda, Kyushu Institue of Technology, Japan

IAC-19.B4.1.20
THE ROLE OF CUBESATS PROGRAMS IN WORKFORCE DEVELOPMENT FOR DEVELOPING COUNTRIES
Taiwo Raphael Tejumola, International Space University, France

IAC-19.B4.1.21
SMALL SPACECRAFT EARTH OBSERVING MISSIONS FOR NATURAL CAPITAL ASSESSMENT
Afreen Siddiqi, Massachusetts Institute of Technology (MIT), United States

B4.2. Small Space Science Missions

October 21 2019, 15:00 — 151B

Co-Chair(s): Stamatios Krimigis, The John Hopkins University Applied Physics Laboratory, United States; Larry Paxton, The John Hopkins University Applied Physics Laboratory, United States;
Rapporteur(s): Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom;

IAC-19.B4.2.1
POLARIMETRY TO UNIFY THE CORONA AND HELIOSPHERE (PUNCH) MISSION DESIGN
William Kosmann, The Astronautics Company, L.P., United States

IAC-19.B4.2.2
SIHLA - SPATIAL/SPECTRAL IMAGING OF HYDROGEN LYMAN ALPHA
Larry Paxton, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.B4.2.3
IMAGING X-RAY POLARIMETRY EXPLORER (IXPE) MISSION IMPLEMENTATION AND DEVELOPMENT PROGRESS
William Deininger, Ball Aerospace & Technologies Corp., United States

IAC-19.B4.2.4
HALOSAT: A CUBESAT SEARCH FOR MISSING BARYONS
Daniel LaRocca, University of Iowa, United States

IAC-19.B4.2.5
GAMMA SWARM – COMPACT CUBESAT SYSTEM FOR GRAVITATIONAL WAVE COUNTERPARTS' DETECTION
Georgii Gaikov, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.B4.2.6
THE RAADSAT MISSION FOR STUDYING TERRESTRIAL GAMMA-RAY FLASHES
Ahlam Al Qasim, University College London (UCL), United Kingdom

IAC-19.B4.2.7 (non-confirmed)
NEUTRON-1 MISSION: LOW EARTH ORBIT NEUTRON FLUX DETECTION
Miguel Nunes, University of Hawaii and Manoa, United States

IAC-19.B4.2.8
LICIACUBE: TECHNICAL SOLUTIONS TO MONITOR AN ASTEROID SPACE IMPACT
Marilena Amoroso, ASI - Italian Space Agency, Italy

IAC-19.B4.2.9
NEAR EARTH ASTEROID SCOUT - EXPLORING ASTEROID 1991VG USING A SMALLSAT
Les Johnson, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, United States

IAC-19.B4.2.10
ATMOSPHERIC COUPLING AND DYNAMICS EXPLORER (ARCADE): EXPLORING THE TROPICS AT VERY LOW ALTITUDES
Amal Chandran, Nanyang Technological University, Singapore, Republic of

IAC-19.B4.2.11
THE NETHERLANDS CHINA LONG WAVELENGTH EXPLORER MISSION; THE ANALOG RECEIVER SYSTEM
Mark Ruiter, ASTRON Netherlands Institute for Radio Astronomy, The Netherlands

IAC-19.B4.2.12
SPOOQY-1, A CUBESAT TO DEMONSTRATE AN ENTANGLED PHOTON LIGHT SOURCE
Robert Bedington, Singapore, Republic of

IAC-19.B4.2.13
SLP: THE SWEEPING LANGMUIR PROBE INSTRUMENT TO MONITOR THE UPPER IONOSPHERE ON BOARD THE PICASSO NANO-SATELLITE
Sylvain Ranvier, Belgian Institute for Space Aeronomy (BISA), Belgium

IAC-19.B4.2.14
QUBE: FUNDAMENTALLY SECURE DATA WITH THE HELP OF QUANTUM KEY DISTRIBUTION ON CUBESATS
Roland Haber, Zentrum für Telematik, Germany

B4.3. Small Satellite Operations

October 22 2019, 14:45 — 151B

Co-Chair(s): Andreas Hornig, University of Stuttgart, Germany; Peter M. Allan, STFC, United Kingdom;
Rapporteur(s): Norbert Lemke, OHB System AG, Germany; Lynette Tan, Singapore Space and Technology Association (SSTA), Singapore, Republic of;

IAC-19.B4.3.1
BLOCKSAT: ON-DEMAND ACCESS TO SHARED-USE SATELLITE CONSTELLATIONS
Ariel Ekblaw, Massachusetts Institute of Technology (MIT), United States

IAC-19.B4.3.2
COMMISSIONING OF THE OPTICAL COMMUNICATION DOWNLINK SYSTEM OSIRISV1 ON THE UNIVERSITY SMALL SATELLITE "FLYING LAPTOP"
Jonas Keim, IRS, University of Stuttgart, Germany

IAC-19.B4.3.3 (withdrawn)
CLOUD-BASED MODULAR E2E GROUND SEGMENT AUTOMATION
Ran Qedar, Telespazio VEGA Deutschland GmbH, Germany

IAC-19.B4.3.4
SYSTEM-LEVEL AUTONOMOUS DECISION-MAKING FOR EARTH OBSERVATION SATELLITE SYSTEMS
Carles Araguz, Technical University of Catalonia (UPC), Spain

IAC-19.B4.3.5
ADAPTIVE CODING AND MODULATION SCHEME FOR SATELLITE UP- AND DOWNLINKS
Andreas Freimann, University of Würzburg, Germany

IAC-19.B4.3.6
ABSTRACTING CUBESAT OPERATIONS: A PATH TO REAL CUBESAT INTEROPERABILITY
Vidushi Jain, York University, Canada

IAC-19.B4.3.7
NEWSPACE - EUROPEAN PERSPECTIVES
Norbert Frischauf, TU Graz, Austria

IAC-19.B4.3.8
COLLABORATIONS BETWEEN ACADEMIA AND THE COMMERCIAL SMALL SATELLITE INDUSTRY
Harriet Brettle, Space Generation Advisory Council (SGAC), United Kingdom

IAC-19.B4.3.9
L.A.R.S. - MOBILE GROUND STATION FOR CUBESAT OPERATIONS
Sebastian Fexer, DLR (German Aerospace Center), Germany

IAC-19.B4.3.10
SMALL SATELLITE OPERATIONS PLANNING FOR AGILE DISASTER RESPONSE USING GRAPH THEORETICAL TECHNIQUES
Ciara McGrath, University of Strathclyde/Advanced Space Concepts Laboratory, United Kingdom

IAC-19.B4.3.11
DATA-DRIVEN FAULT DETECTION AND ISOLATION FOR SMALL SPACECRAFT
Justin Mansell, Purdue University, United States

IAC-19.B4.3.12
END-OF-LIFE POWER MANAGEMENT ON THE GRACE SATELLITES WITH SEVERAL FAILED BATTERY CELLS
Kay Müller, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.B4.3.13
SMALL ROBOTS FOR BIG MISSIONS: EXAMINING THE POTENTIAL FOR SMALLSAT-BASED DEXTEROUS SERVICING SYSTEMS
David Akin, University of Maryland, United States

B4.4. Small Earth Observation Missions

October 23 2019, 09:45 — 151B

Co-Chair(s): Carsten Tobehn, European Space Agency (ESA), The Netherlands; Larry Paxton, The John Hopkins University Applied Physics Laboratory, United States;
Rapporteur(s): Werner R. Balogh, World Meteorological Organization (WMO), Switzerland; Marco Gomez Jenkins, University of Cambridge, United Kingdom;

IAC-19.B4.4.1
NOVASAR-1 - FIRST YEAR OF OPERATION
Philip Whittaker, Surrey Satellite Technology Ltd (SSTL), United Kingdom

IAC-19.B4.4.2
PROTO-FLIGHT MODEL TEST RESULTS OF SYNTHETIC APERTURE RADAR FOR 100KG CLASS SMALL SATELLITE
Hirobumi Saito, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.B4.4.3
DESIGN OF PAYLOAD DATAFLOW IN A HYPERSPECTRAL IMAGING NANOSATELLITE
Parth Kalgaonkar, India

IAC-19.B4.4.4
HIGHLY INTEGRATION OF HYPERSPECTRAL, THERMAL AND ARTIFICIAL INTELLIGENCE FOR THE ESA PHISAT-1 MISSION
Marco Esposito, Cosine Research BV, The Netherlands

IAC-19.B4.4.5
CUAVA-1: AUSTRALIA'S NEW SPACE TRAINING CENTRE AND CUBESAT
Iver Cairns, The University of Sydney, Australia

IAC-19.B4.4.6
THE ERNST MISSION: MWIR IMAGING AND ADVANCED TECHNOLOGY DEMONSTRATION IN A 12 U NANOSATELLITE
Clemens Horch, Fraunhofer EMI, Germany

IAC-19.B4.4.7
THE DMSAT-1 MISSION: PRIMARY INSTRUMENT - POLARIMETER CHARACTERISTICS AND ITS EARTH OBSERVATION APPLICATIONS
Alya AlMaazmi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-19.B4.4.8
TEN-KOH A SMALL SATELLITE MISSION TO OBSERVE THE LEO ENVIRONMENT IN THE PRESENCE OF A DECREASING SOLAR CYCLE
Isai Fajardo, Kyushu Institue of Technology, Japan

IAC-19.B4.4.9
IONOSPHERE OBSERVATION AND 3D MAPPING MISSION VIA CUBESAT CONSTELLATION; IN-ORBIT OPERATION RESULTS OF THE SPATIUM-I CUBESAT.
Kateryna Aheieva, Laboratory of Spacecraft Environment Interaction Engineering, Kyushu Institute of Technology, Japan

IAC-19.B4.4.10
ECOBELTSAT-1: THE BELT AND ROAD SATELLITE PROJECT
Fatih AVCI, Beihang University (BUAA), China

IAC-19.B4.4.11 (withdrawn)
CUBESCOPE, THE FUTURE OF SATELLITE AND OBSERVATIONAL SECTORS IN MEXICO
Miranda Jaramillo Morales, ATOMX Education, Mexico

IAC-19.B4.4.12
DEVELOPMENT STRATEGIES AND MISSION STUDIES FOR TAIWAN'S NEW SMALL EARTH OBSERVATION SATELLITE CONSTELLATION
Feng-Tai Hwang, National Space Organization, Taipei

B4.5. Access to Space for Small Satellite Missions

October 23 2019, 14:45 — 151B

Co-Chair(s): Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), United Kingdom; Philip Davies, Deimos Space UK Ltd, United Kingdom;
Rapporteur(s): Jeffery Emdee, The Aerospace Corporation, United States;

IAC-19.B4.5.1
KEYNOTE: A 2019 UPDATE ON THE IMPENDING SMALL LAUNCH VEHICLE BOOM
Carlos Niederstrasser, Northrop Grumman Corporation, United States

IAC-19.B4.5.2
ENABLING RESPONSIVE LAUNCH: WHAT THE DARPA LAUNCH CHALLENGE CAN TEACH FOR TECH AND REGULATION
Kelsey McBarron, United States

IAC-19.B4.5.3
CONSTELLATION DEPLOYMENT ANALYSIS FOR A NOTIONAL MEGA-CONSTELLATION
Grant Cates, The Aerospace Corporation, United States

IAC-19.B4.5.4
U.S. AIR FORCE EELV CERTIFICATION FOR SMALL SATELLITE MISSIONS
Robert Unverzagt, The Aerospace Corporation, United States

IAC-19.B4.5.5
NASA'S SPACE LAUNCH SYSTEM: DEEP SPACE ACCESS FOR CUBESATS
Kimberly Robinson, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, United States

IAC-19.B4.5.6
A CRITICAL EXAMINATION OF LAUNCH SOLUTIONS FOR SMALL SATELLITES SEEKING HIGH ENERGY ORBITS
Daniel Adams, United Launch Alliance, United States

IAC-19.B4.5.7
ACCESS TO SPACE FOR TELECOMMUNICATION NANOSATELLITES: ALL THE CHALLENGES OF THE LAUNCH CAMPAIGN
Stefano Rossi, Astrocast SA, Switzerland

IAC-19.B4.5.8
INORBIT NOW: CASE STUDIES FOR A FAST AND PRECISE CUBESAT DEPLOYMENT SERVICE
Stefano Antonetti, D-Orbit, Italy

IAC-19.B4.5.9
EPSILON'S DEVELOPMENT AND LAUNCH FOR MULTIPLE SMALL SATELLITES MISSION
Hiroshi Ikaida, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.B4.5.10
THE LOW-COST, LIGHT SATELLITE LAUNCH OPPORTUNITIES (L3) INITIATIVE
Julio Aprea, European Space Agency (ESA), France

IAC-19.B4.5.11
SSMS (SMALL SPACECRAFT MISSION SERVICE) DISPENSER
Salvatore Corbo, SAB AEROSPACE SRL, Italy

IAC-19.B4.5.12
A NEW SMALL LAUNCH VEHICLE BEGINNING IN 2019
Christopher Craddock, Rocketstar, United States

IAC-19.B4.5.13 (withdrawn)
2019 OPENING OF A NEW EQUATORIAL COMMERCIAL SPACEPORT IN AUSTRALIA
Jason Armstrong, TriSept Corporation, United States

IAC-19.B4.5.14
ESPASTAR – ENABLING SPACE MISSIONS WITH RIDESHARE USING AN INNOVATIVE PROPULSIVE ESPA FREE FLYING PLATFORM
Carol Welsch, Northrop Grumman Corporation, United States

B4.6A. Generic Technologies for Small/ Micro Platforms

October 24 2019, 09:45 — 151B

Co-Chair(s): Philip Davies, Deimos Space UK Ltd, United Kingdom; Joost Elstak, Airbus Defence and Space Netherlands, The Netherlands;
Rapporteur(s): Jian Guo, Delft University of Technology (TU Delft), The Netherlands; Thomas Terzibaschian, DLR, German Aerospace Center, Germany;

IAC-19.B4.6A.1
THE QUEEN MISSION TO DEMONSTRATE AN OPTICAL RB FREQUENCY REFERENCE PAYLOAD AND ADVANCED SMALL SATELLITE PLATFORM TECHNOLOGY
Merlin F. Barschke, Technische Universität Berlin, Germany

IAC-19.B4.6A.2
DEMONSTRATION OF AERODYNAMIC CONTROL MANOEUVRES IN VERY LOW EARTH ORBIT USING SOAR (SATELLITE FOR ORBITAL AERODYNAMICS RESEARCH)
Nicholas H. Crisp, The University of Manchester, United Kingdom

IAC-19.B4.6A.3 (non-confirmed)
NOVEL PHASE CHANGE MATERIAL COMPOSITE FOR SUSTAINABLE SMALLSAT THERMAL MANAGEMENT
Wen Hao Li, Nanyang Technological University, Singapore, Republic of

IAC-19.B4.6A.4
ADCS CONCEPTUAL DESIGN FOR GOSOLAR DEMONSTRATOR MISSION.
Jose Luis Redondo Gutierrez, German Aerospace Center (DLR), Germany

IAC-19.B4.6A.5
MULTIFUNCTIONAL SOFTWARE-DEFINED RADIO CHIP DESIGNED FOR SMALL SATELLITE APPLICATIONS
Pedro Rodrigues, Tekever, Portugal

IAC-19.B4.6A.6
TRMPC ATTITUDE CONTROL ALGORITHM FOR PRECISE POINTING OF SMALL SATELLITES
Matteo Dentis, Politecnico di Torino, Italy

IAC-19.B4.6A.7
SATELLITE INTERCOMMUNICATION BETWEEN THE NANOSATELLITE "AZTECHSAT-1" AND THE SATELLITES CONSTELLATION OF GLOBALSTAR.
Hector Simon Vargas Martinez, Universidad Popular Autónoma del Estado de Puebla, Mexico

IAC-19.B4.6A.8
DEFIANT: SUPPORTING SMALL SATELLITE CONSTELLATIONS THROUGH RAPID DEVELOPMENT AND CUSTOMIZATION
Benoit Larouche, Space Flight Laboratory, University of Toronto, Canada

IAC-19.B4.6A.9
THE EXO-BRAKE AS AN INEXPENSIVE MEANS OF ACHIEVING TARGETED DE-ORBIT FROM LOW EARTH ORBIT – RECENT FLIGHT EXPERIENCE AND FUTURE APPLICATIONS
Marcus Murbach, NASA, United States

IAC-19.B4.6A.10
NEURAL NETS USE FOR SATELLITE TELEMETRY ANALYSIS IN APPLICATION FOR KAZSTSAT MISSION
Arman Bekembayev, Ghalam LLP, Kazakhstan

IAC-19.B4.6A.11 (withdrawn)
FROM CUBESATS TO MICROSATS STANDARDIZATION: REDUCING COSTS BY GENERATING A SCALE ECONOMY
Nabil Souhair, Space Generation Advisory Council (SGAC), Italy

IAC-19.B4.6A.12
ADDITIVE MANUFACTURING IN LOW EARTH ORBIT WITHIN A 1U CUBE SATELLITE
Joel Quintana, The University of Texas at El Paso, United States

B4.6B. Generic Technologies for Nano/Pico Platforms

October 25 2019, 13:30 — 151B

Chairman(s): Andy Vick, RAL Space, United Kingdom;
Co-Chair(s): Zeger de Groot, Innovative Solutions in Space BV, The Netherlands;
Rapporteur(s): Martin von der Ohe, Technische Universität Berlin, Germany; Eugene D Kim, Satrec Initiative, Korea, Republic of;

IAC-19.B4.6B.1 (withdrawn)
INFLATABLE ANTENNAS FOR SMALL SATELLITES
Aman Chandra, University of Arizona, United States

IAC-19.B4.6B.2
LOW MASS ARTICULATED BOOM FOR SMALL SATELLITES
Katelyn Ball, University of Alberta, Canada

IAC-19.B4.6B.3
DEPLOYMENT MECHANISM FOR A L-BAND HELIX ANTENNA IN 1-UNIT CUBESAT
Lara Fernandez Capon, Universitat Politecnica de Catalunya (UPC BarcelonaTech), Spain

IAC-19.B4.6B.4
ON ORBIT INSPECTION WITH CUBESATS: STATE OF THE ART AND FUTURE PROSPECTIVE
Davide Calabrese, Politecnico di Torino, Italy

IAC-19.B4.6B.5
SYSTEM DESIGN TRADE OFF FOR A QUANTUM CHANNEL BETWEEN A LEO CUBESAT AND OPTICAL GROUND STATION
Mohammad Iranmanesh, RAL Space, United Kingdom

IAC-19.B4.6B.6
BIRDS-3 SATELLITE PROJECT INCLUDING THE FIRST SATELLITES OF SRI LANKA AND NEPAL
Withanage Dulani Chamika, Kyushu Institute of Technology, Japan

IAC-19.B4.6B.7 (withdrawn)
GOMX-5 – THE ENABLER OF TOMORROW'S CONSTELLATIONS
Nicolò Carletti, Italy

IAC-19.B4.6B.8
A COMPACT LAUNCH LOCK SYSTEM FOR CUBESAT-SIZED PAYLOADS
Lorenzo Olivieri, CISAS "G. Colombo" - University of Padova, Italy

IAC-19.B4.6B.9
ON-ORBIT ROBOTIC ASSEMBLY TESTBED FOR DEVELOPMENT OF ORBITAL STRUCTURE ASSEMBLY TECHNIQUES IN A CUBESAT FORM FACTOR
Ian Hardy, United States Naval Academy, United States

IAC-19.B4.6B.10
COMMUNICATIONS SUBSYSTEM DESIGN AND OPERATIONAL DIFFERENCES BETWEEN AISTECHSAT-2 AND AISTECHSAT-3
Manuel Moreno-Ibáñez, Aistech Space, Spain

IAC-19.B4.6B.11
BEESAT-5: A NEW LEVEL OF SATELLITE MINIATURIZATION AND INTEGRATION
Frank Baumann, Technische Universität Berlin, Germany

IAC-19.B4.6B.12
IMPLEMENTATION AND COMPARISON OF AES-RSA AND AES-ECC HYBRID ENCRYPTION SCHEMES FOR NANOSATELLITES
Niranjan Dindodi Ramesh, R V College of Engineering, Bengaluru, India

IAC-19.B4.6B.13
SIW PATCH ANTENNA FOR COMMUNICATION BETWEEN NANOSATELLITES IN LAUNCH TUBES
Muhammad Khan, University of Houston, United States

IAC-19.B4.6B.14
SIGNIFICANCE OF 3U CUBESAT ORIGAMISAT-1 FOR SPACE DEMONSTRATION OF MULTIFUNCTIONAL DEPLOYABLE MEMBRANE
Kosuke Ikeya, Tokyo Institute of Technology, Japan

IAC-19.B4.6B.15
UPPER-STAGE AUTONOMOUS CUBESAT PROPULSION MODULE FOR AFFORDABLE ACCESS TO EARTH ORBIT
Silvana Radu, Delft University of Technology (TU Delft), The Netherlands

B4.7. Constellations and Distributed Systems

October 24 2019, 14:45 — 151B

Co-Chair(s): Rainer Sandau, International Academy of Astronautics (IAA), Germany; Michele Grassi, University of Naples "Federico II", Italy;
Rapporteur(s): Jaime Esper, National Aeronautics and Space Administration (NASA), United States; Aaron Rogers, Maxar Technologies, United States;

IAC-19.B4.7.1
A NEW DIMENSION IN SMALL SATELLITE CONSTELLATIONS
Camilla Weiss, Surrey Satellite Technology Ltd (SSTL), United Kingdom

IAC-19.B4.7.2
ARCTIC DIGITAL INFRASTRUCTURE GAPS: OPPORTUNITIES FOR NEWSPACE
Karen Jones, The Aerospace Corporation, United States

IAC-19.B4.7.3
EARTH OBSERVATION CONSTELLATIONS OF SMALL & MICRO SATELLITES VERSUS NEW AERIAL AND GROUND DISTRIBUTED SYSTEMS
Annamaria Nassisi, Thales Alenia Space Italia, Italy

IAC-19.B4.7.4
CUBESAT CONSTELLATION FOR SPACE RADIATION MEASUREMENTS (CCSRM)
Behnoosh Meskoob, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.B4.7.5 (withdrawn)
CONCEPTUAL DESIGN OF A LUNAR GNSS CONSTELLATION BASED ON CUBESAT TECHNOLOGY
Gabriele Ferrari, Politecnico di Torino, Italy

IAC-19.B4.7.6
COMMUNICATION SYSTEM OF LEO CUBESAT CONSTELLATION FOR DISASTER RESPONSE
Cheki Dorji, LaSEINE, Kyushu Institute of Technology, Japan

IAC-19.B4.7.7
CYGNSS, AN 8-MICRO SATELLITE CONSTELLATION, ENTERS EXTENDED MISSION
Jillian Redfern, Southwest Research Institute, United States

IAC-19.B4.7.8
END-TO-END SPACE SYSTEM DEMONSTRATION CONCEPTS FOR A DISTRIBUTED SAR BY SMALL FORMATION FLYING SATELLITES
Alfredo Renga, University of Naples "Federico II", Italy

IAC-19.B4.7.9
TIM: AN INTERNATIONAL NANO-SATELLITE FORMATION FOR PHOTOGRAMMETRIC EARTH OBSERVATION
Klaus Schilling, University Wuerzburg, Germany

IAC-19.B4.7.10
WHITE PAPER: COSMOX FEDERATED SATELLITE SYSTEMS INTER-SATELLITE COMMUNICATION NETWORK TO ENABLE REAL-TIME EARTH OBSERVATION
Mina Takla, CosmoX, Russian Federation

IAC-19.B4.7.11
TOWARDS END TO END DESIGN OF SPACECRAFT SWARMS FOR SMALL-BODY RECONNAISSANCE
Ravi Nallapu, University of Arizona, United States

IAC-19.B4.7.12
LOW LATENCY IOT/M2M USING NANO-SATELLITES
Jos van 't Hof, Delft University of Technology (TU Delft), The Netherlands

IAC-19.B4.7.13
AN ASSESSMENT OF IOT VIA SATELLITE: TECHNOLOGIES, SERVICES AND POSSIBILITIES
Roger Birkeland, Norwegian University of Science and Technology, Norway

IAC-19.B4.7.14
TUBIX-10 — DESIGN AND FLIGHT EXPERIENCE OF A NANOSATELLITE BUS FOR DISTRIBUTED MISSIONS
Walter Frese, Technische Universität Berlin, Germany

IAC-19.B4.7.15
DESIGN FOR CROSS-PLATFORM COMPATIBILITY AND RELIABILITY IN DISTRIBUTED DEEP SPACE ARCHITECTURES CONTROLLED BY THE LEO MULTI-PURPOSE COMMAND AND CONTROL MISSION
Irene Farquhar, United States

B4.8. Small Spacecraft for Deep-Space Exploration

October 25 2019, 09:45 — 151B

Co-Chair(s): Leon Alkalai, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Rene Laufer, Baylor University / University of Cape Town, United States;
Rapporteur(s): Amanda Stiles, Rocket Lab, United States;

IAC-19.B4.8.1
KEYNOTE: MARCO: FLIGHT RESULTS FROM THE FIRST INTERPLANETARY CUBESAT MISSION
Andrew Klesh, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.B4.8.2
SMALLSAT AEROCAPTURE: BREAKING THE ROCKET EQUATION TO ENABLE A NEW CLASS OF PLANETARY MISSIONS
Alex Austin, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.B4.8.3
SYSTEMS DESIGN OF MARIO: A STAND-ALONE 16U CUBESAT TO MARS
Karthik Venkatesh Mani, Politecnico di Milano, Italy

IAC-19.B4.8.4
LUNAR ICECUBE: PIONEERING TECHNOLOGIES FOR INTERPLANETARY SMALL SATELLITE EXPLORATION
Benjamin Malphrus, Morehead State University, United States

IAC-19.B4.8.5
TELECOMMUNICATIONS SYSTEMS TESTING AND GROUND-COMPATIBILITY VERIFICATION FOR EM-1 CUBESAT MISSIONS
Alessandra Babuscia, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.B4.8.6
LUNIR: A CUBESAT SPACECRAFT PERFORMING ADVANCED INFRARED IMAGING OF THE LUNAR SURFACE
Joseph Shoer, Lockheed Martin (Space Systems Company), United States

IAC-19.B4.8.7
MOON CUBESAT HAZARD ASSESSMENT (MOOCHA) – PROPOSING AN INTERNATIONAL EARTH-MOON SMALL SATELLITE CONSTELLATION
Rene Laufer, Baylor University / University of Cape Town, United States

IAC-19.B4.8.8
CHALLENGES IN LICIA CUBESAT TRAJECTORY DESIGN TO SUPPORT DART MISSION SCIENCE
Michèle Lavagna, Politecnico di Milano, Italy

IAC-19.B4.8.9
DEVELOPMENT AND TESTING OF AN ENGINEERING MODEL FOR AN ASTEROID HOPPING ROBOT
Greg Wilburn, University of Arizona, United States

IAC-19.B4.8.10
CAPABILITIES OF A NANO-LIDAR FOR FUTURE RECONNAISSANCE MISSIONS TO NEOS
Lewis Walker, University of Strathclyde, United Kingdom

IAC-19.B4.8.11
FEASIBILITY AND PRELIMINARY DESIGN OF A CHIPSAT PLANETARY ENTRY MISSION TO INVESTIGATE THE ATMOSPHERE OF VENUS
Salvatore Vivenzio, International Space University (ISU), France

IAC-19.B4.8.12
FLIGHTS ARE TEN A SAIL – RE-USE AND COMMONALITY IN THE DESIGN AND SYSTEM ENGINEERING OF SMALL SPACECRAFT SOLAR SAIL MISSIONS WITH MODULAR HARDWARE FOR RESPONSIVE AND ADAPTIVE EXPLORATION
Jan Thimo Grundmann, DLR (German Aerospace Center), Germany

IAC-19.B4.8.13
PLANETARY EXPLORATION USING CUBESAT DEPLOYED SAILPLANES
Adrien Bouskela, University of Arizona, United States

IAC-19.B4.8.14
MARS SMALL-SPACECRAFT HUMAN EXPLORATION RESOURCE PROSPECTOR WITH AERO-BRAKING (SHERPA): DEMONSTRATING AN END-TO-END MISSION TO PHOBOS DISTANT RETROGRADE ORBIT
Jaime Esper, National Aeronautics and Space Administration (NASA), United States

B4.9-GTS.5. Small Satellite Missions Global Technical Session

October 24 2019, 09:45 — 147B

Co-Chair(s): Matthias Hetscher, DLR (German Aerospace Center), Germany; Norbert Lemke, OHB System AG, Germany;
Rapporteur(s): Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), United Kingdom;

IAC-19.B4.9-GTS.5.1
RISK MANAGEMENT AND FLIGHT ASSURANCE FOR SMALLSAT MISSION SUCCESS
Brett Bennett, United States

IAC-19.B4.9-GTS.5.2
ADDRESSING COMPLEXITIES AND OVERCOMING CHALLENGES FOR NEW CUBESAT MISSIONS
Mary Grace Kalnay, Concordia University, Canada

IAC-19.B4.9-GTS.5.3
NEW SATELLITE'S ASSEMBLY, INTEGRATION AND TESTING FACILITY IN UNITED ARAB EMIRATES
Mohamed Alkarbi, United Arab Emirates

IAC-19.B4.9-GTS.5.4
SETTING THE STANDARD FOR THE 6U INTERNET-OF-THINGS CUBESAT PLATFORM: DESIGN AND IN-ORBIT PERFORMANCE.
Hugo Brouwer, ISIS - Innovative Solutions In Space B.V., The Netherlands

IAC-19.B4.9-GTS.5.5
PW-SAT2 SATELLITE LESSONS LEARNED
Inna Uwarowa, Students Space Association, Warsaw University of Technology, Poland

IAC-19.B4.9-GTS.5.6
MOTIVATION AND DEVELOPMENT PATH FOR A FULLY AUTONOMOUS SMALL SATELLITE INSPECTOR
George Studor, NASA, United States

IAC-19.B4.9-GTS.5.7
SCOTLAND TO SPACE - SKYRORA LTD.
Katie Miller, United Kingdom

IAC-19.B4.9-GTS.5.8
IONIC NEUTRON CONTENT ANALYZER: SYSTEM DESIGN OF A STUDENT BUILT 3U CUBESAT
Ian Rankin, New Mexico State University, United States

IAC-19.B4.9-GTS.5.9 (non-confirmed)
CONCEPTUAL DESIGN OF AN ELECTRICAL POWER SUPPLY SUB-SYSTEM SUPPORTING EARTH OBSERVATION MISSIONS ON SMALL SATELLITES BY INTRODUCING SYNERGIES WITH THE PROPULSION SUB-SYSTEM
Nadja Wolf, ArianeGroup, Germany

IAC-19.B4.9-GTS.5.10
SIMULATION AND SELECTION OF DETUMBLING ALGORITHMS FOR A 3U CUBESAT
Vishnu Katkoori, Birla Institute of Technology and Science(BITS), India

IAC-19.B4.9-GTS.5.11
IBIS, A TRUE DIGITAL SUNSENSOR IN A PACKAGE.
Johan Leijtens, The Netherlands

IAC-19.B4.9-GTS.5.12 (withdrawn)
ASSESSING THE IMPACT OF APPLYING MODULAR SYSTEMS ON THE SPACECRAFT THERMAL DESIGN
George Varewijck, TU Graz, The Netherlands

IAC-19.B4.9-GTS.5.13
MECHANICAL CONFIGURATION OF KHALIFASAT
Ahmed Alyammahi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-19.B4.9-GTS.5.14
DIY SATELLITES: APPLICATIONS FOR CITIZEN SPACE
Jake Singh, The Aerospace Corporation, United States

IAC-19.B4.9-GTS.5.15
SWARM ROBOTICS BASED CUBESATS FOR REMOVING LARGE SPACE JUNK IN LOW EARTH ORBIT
Nijanthan Vasudevan, India

B4.IP. Interactive Presentations: 26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS

October 24 2019, 13:15 — IP Area

Co-Chair(s): Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), United Kingdom; Jian Guo, Delft University of Technology (TU Delft), The Netherlands;
Support(s): Rhoda Shaller Hornstein, United States;

IAC-19.B4.IP.1
SATELLDRONE – VERY LOW EARTH ORBIT (VLEO) BASED SMALL SATELLITE CONSTELLATION
Siddhesh Naik, India

IAC-19.B4.IP.2
NANOFF: A 2U-CUBESAT FORMATION FLIGHT MISSION
Sascha Weiss, TU Berlin, Germany

IAC-19.B4.IP.3
THE BUSINESS IMPERATIVE FOR MODULARITY IN COMMUNICATIONS SATELLITES
Caleb Williams, SpaceWorks Enterprises, Inc., United States

IAC-19.B4.IP.4
FLIGHT RESULTS OF AN ADVANCED MULTIBAND COMMUNICATION SDR PAYLOAD IN LUME-1 SATELLITE
Diego Nodar, Universidad de Vigo, Spain

IAC-19.B4.IP.5
CERES PROJECT - CONSTELLATION OF CUBESATS FOR PRECISION AGRICULTURE IN BRAZIL
Victor Baptista, Universidade de Brasília, Brazil

IAC-19.B4.IP.6
PLATINO PLATFORM: AN INNOVATIVE ITALIAN ALL ELECTRIC SMALL SATELLITE PLATFORM
Beatrice Sabbatinelli, Sitael Spa, Italy

IAC-19.B4.IP.7 (withdrawn)
OVERCOMING CHALLENGES TO INCREASE LAUNCH FLEXIBILITY FOR SMALLSAT CUSTOMERS
Philip Bracken, Spaceflight Inc., United States

IAC-19.B4.IP.8
FIRST IN-ORBIT RESULTS FROM KAZSTSAT
Vladimir Ten, Ghalam LLP, Kazakhstan

IAC-19.B4.IP.9
OPEN-MODULAR ARCHITECTURE OF "BAUMANETS 3" SMALL SPACECRAFT
Vera Mayorova, Bauman Moscow State Technical University, Russian Federation

IAC-19.B4.IP.10
THE OPEN SOURCE SATELLITE PROGRAMME: DEVELOPING AN INNOVATIVE, LOW-COST, GENERIC MICROSATELLITE PLATFORM TO ADVANCE NEW MISSION IDEAS FROM THEORETICAL POSSIBILITY TO COMMERCIALLY-SUSTAINABLE REALITY
John Paffett, KISPE Space Systems Limited, United Kingdom

IAC-19.B4.IP.11
THREE DIMENSIONAL PHASED ARRAY ANTENNA FOR COMMUNICATIONS WITH SATELLITE CONSTELLATION
Nobuyuki Kaya, Kobe University, Japan

IAC-19.B4.IP.12
IRAS: PROGRESS IN DEVELOPMENT OF THE DIGITAL CONCURRENT ENGINEERING PLATFORM, SOFTWARE TOOLS AND INNOVATIVE TECHNOLOGIES
Manfred Ehresmann, Institute of Space Systems, Universität Stuttgart, Germany

IAC-19.B4.IP.13
IMPROVING CUBESAT OPERATIONS USING FLIGHT PERFORMANCE TELEMETRY
Johan Carvajal-Godinez, Costa Rica Institute of Technology (ITCR), Costa Rica

IAC-19.B4.IP.14
ASTROSCALE'S VISION FOR HOLO-VIRTUALIZED AUGMENTED REALITY FOR ELSA-D ASSEMBLY, INTEGRATION AND TESTING
Nathaniel Guy, ASTROSCALE JAPAN Inc., Japan

IAC-19.B4.IP.15
NOVEL BUS ARCHITECTURE FOR SAFE MICRO SATELLITE OPERATIONS
Rachana Reddy Mamidi, Germany

IAC-19.B4.IP.16
IMPROVED CUBESAT MISSION RELIABILITY USING A RIGOROUS TOP-DOWN SYSTEMS-LEVEL APPROACH
Rahul Rughani, University of Southern California, United States

IAC-19.B4.IP.17 (withdrawn)
BUILDING AUSTRALIAN EARTH OBSERVATION CAPACITY WITH NOVASAR-1
Amy Parker, CSIRO, Australia

IAC-19.B4.IP.18
MISSION-ORIENTED DESIGN FOR NANOSATELLITES USING INNOVATIVE TOOLS AND PLATFORMS: BEEAPP AND BEEKIT
Daniel Sors Raurell, Open cosmos Ltd., United Kingdom

IAC-19.B4.IP.19
FLIGHT SOFTWARE DEVELOPMENT USING CORE FLIGHT SYSTEM (CFS) FOR THE LUNAR ICECUBE MISSION
Sean McNeil, Morehead State University, United States

IAC-19.B4.IP.20
AN OPTIMIZATION APPROACH FOR DESIGNING OPTIMAL TRACKING CAMPAIGNS FOR LOW-RESOURCES DEEP-SPACE MISSIONS
Lorenzo Gentile, TH Köln, Germany

IAC-19.B4.IP.21
WRITING WITH SUNLIGHT: CUBESAT FORMATION CONTROL USING AERODYNAMIC FORCES
Danil Ivanov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

IAC-19.B4.IP.22
ADVANCES IN THE UCH-SAT NANOSATELLITE DESIGN USING COMMERCIAL ELECTRONICS DEVICES
Avid Roman-Gonzalez, Image Processing Research Laboratory (INTI-Lab). Universidad de Ciencias y Humanidades - UCH, Peru

IAC-19.B4.IP.23
AUTOMATED ONBOARD MISSION PLANNING FOR ROBUST AND FLEXIBLE SPACECRAFT OPERATIONS
Thomas Cunningham, Purdue University, United States

IAC-19.B4.IP.24
ON-BOARD MANAGEMENT OF AUTONOMOUS FORMATION FLYING SMALLSATS IN PROBA-3 MISSION
Sergio Tiraplegui Riveras, SENER Ingenieria y Sistemas, S.A., Spain

IAC-19.B4.IP.25
CYGNSS SMALL SATELLITE GNSS-R CONSTELLATION MISSION FOR OCEAN SCIENCE APPLICATION
Rajeswari Balasubramaniam, University of Michigan, Ann Arbor, United States

IAC-19.B4.IP.26
PLUG AND FLY
Saish Sridharan, Space Products and Innovation, Germany

IAC-19.B4.IP.27
AN ADVANCED MULTI-ORBIT PRECISE TARGETING TOOL TO RAPIDLY DESIGN MULTI-PAYLOAD DISPENSER DELIVERY STRATEGY
Jacopo Prinetto, Politecnico di Milano, Italy

IAC-19.B4.IP.28
HIGH-ENERGY MISSIONS ANALYSIS FOR NANOSATELLITES USING ABLATIVE PULSED PLASMA THRUSTERS
Giancarlo Santilli, University of Brasilia, Brazil

IAC-19.B4.IP.29
ENABLING ATTITUDE ACTUATOR FOR SMALL SATELLITES PROXIMITY OPERATIONS
Daniele Luchena, ARCA Dynamics, Italy

IAC-19.B4.IP.30
HOSTED PAYLOADS ON COMMERCIAL SATELLITES
Yilkal Eshete, Ethiopian Space Science and Technology Institute (ESSTI), Ethiopia

IAC-19.B4.IP.31 (withdrawn)
PAYLOAD SHARING PLATFORM AND MODULAR INTEGRATED DESIGN TECHNOLOGY FOR SMALL SATELLITES
Raihana Shams Islam Antara, BRAC University, Bangladesh

IAC-19.B4.IP.32 (non-confirmed)
MODULAR NANOSATELLITE SUBSYSTEM ARCHITECTURE - OPTIMIZED FOR AN IMAGE CAPTURING BASED PAYLOAD
Emerich Kovacs III, University of Manitoba, Canada

IAC-19.B4.IP.33
INVERSE REINFORCEMENT LEARNING FOR COLLISION AVOIDANCE AND TRAJECTORY PREDICTION IN DISTRIBUTED RECONFIGURATIONS
Stefano Silvestrini, Politecnico di Milano, Italy

IAC-19.B4.IP.34
SIMULATING DISTRIBUTED SMALL SATELLITE NETWORKS: A MODEL-BASED TOOL TAILORED TO DECENTRALIZED RESOURCE-CONSTRAINED SYSTEMS
Carles Araguz, Technical University of Catalonia (UPC), Spain

IAC-19.B4.IP.35 (non-confirmed)
HIGH PERFORMANCE TWO CHANNEL ULTRAVIOLET CAMERA FOR STAR PLANET ACTIVITY RESEARCH CUBESAT (SPARCS)
Shouleh Nikzad, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.B4.IP.36 (withdrawn)
AUTOMATED TESTING FOR SATELLITE ON-BOARD SYSTEMS
Manap Shymyr, Nazarbayev University, Kazakhstan

B5. IAF SYMPOSIUM ON INTEGRATED APPLICATIONS

Coordinator(s): Larry Paxton, The John Hopkins University Applied Physics Laboratory, United States; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom;

B5.1. Tools and Technology in Support of Integrated Applications

October 21 2019, 15:00 — 152A

Co-Chair(s): Larry Paxton, The John Hopkins University Applied Physics Laboratory, United States; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom; Boris Penne, OHB System AG, Germany;
Rapporteur(s): Beatrice Barresi, ESA, United Kingdom;

IAC-19.B5.1.1
FEDERATING SPACE, AIR, AND GROUND AIR QUALITY DATA TO IMPROVE OUTCOMES IN MEGACITIES
Jeanne Holm, United States

IAC-19.B5.1.2
PERFORMANCE EVALUATION OF INTERNET OVER GEOSTATIONARY SATELLITE FOR INDUSTRIAL APPLICATIONS
Marco Schmidt, Bochum University of Applied Sciences, Germany

IAC-19.B5.1.3
DESIGN AND SETUP OF A WORKING ENVIRONMENT FOR TELEMETRY ANALYSIS OF THE CHILEAN SATELLITE FASAT CHARLIE: A CASE STUDY OF FUEL TANK TEMPERATURE
Diego Riquelme, Fuerza Aerea de Chile, Chile

IAC-19.B5.1.4
EARLY WARNING OF OIL SPILLS BASED ON ON-BOARD IMAGERY PRE-PROCESSING ALGORITHM
Mariangela Dejana, University of Rome "La Sapienza", Italy

IAC-19.B5.1.5
METHODS FOR ACCELERATING GEOSPATIAL DATA PROCESSING USING ADIABATIC AND UNIVERSAL QUANTUM COMPUTERS
Michael Brett, Bryce Space and Technology, United States

IAC-19.B5.1.6
THE HEMERA BALLOON INFRASTRUCTURE – NEW, INNOVATIVE AND LOW-COST APPROACH FOR SCIENCE AND TECHNOLOGY, SATELLITE DATA VALIDATION AND PREPARATION OF NEW EARTH OBSERVATION AND SPACE MISSIONS
Kristine Dannenberg, Swedish National Space Board (SNSB), Sweden

IAC-19.B5.1.7
SINO-SCIENTIFIC-SATELLITE MONITOR: A GENERAL PLATFORM OF MONITORING AND DISPLAY FOR SCIENTIFIC SATELLITE MISSION
You Song, Beihang University (BUAA), China

IAC-19.B5.1.8
NOVEL CONCEPT FOR REMOTE SENSING OF COASTAL WATER BODIES USING SUBMERGED ACTIVE SOURCES OF ELECTROMAGNETIC RADIATION
Francisco Javier Segura Hernandez, University of Costa Rica, Costa Rica

IAC-19.B5.1.9
MIMIR'S WELL: SAAB´S AI-BASED INTERFACE TO FUSE DATA FROM SATELLITES AND OTHER SOURCES FOR FAST AND SMART SITUATIONAL AWARENESS AND SITUATIONAL DIRECTION
Adelia Drego, SAAB, Sweden

IAC-19.B5.1.10
COMPARATIVE ANALYSIS OF LANDUSE LAND COVER BETWEEN OPTICAL AND FUSED IMAGE WITH SAR
Saad ul Haque, Institute of Space Technology (IST), Pakistan

IAC-19.B5.1.11
HAPS OBSERVATORY IN STRATOSPHERE
Jiri Pavlik, Czech Republic

IAC-19.B5.1.12
RESEARCH ON TOPOLOGY NETWORK CONSTRUCTION TECHNOLOGY OF UPLINK CONTROL JOB INFORMATION FOR FLIGHT CONTROL REQUIREMENTS
Chen Jungang, Beijing Aerospace Command and Control Center (BACCC), China

B5.2. Integrated Applications End-to-End Solutions

October 24 2019, 09:45 — 140B

Co-Chair(s): Boris Penne, OHB System AG, Germany; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom;

Rapporteur(s): Beatrice Barresi, ESA, United Kingdom; Stefano Ferretti, European Space Agency (ESA), Italy;

IAC-19.B5.2.1
SPACE FOR URBAN INNOVATION: A GLOBAL APPROACH TO DOWNSTREAM SECTOR
Donatella Ponziani, ESA - European Space Agency, France

IAC-19.B5.2.2
IN SPACE NO ONE CAN HEAR THE POLICY GAP: BARRIERS TO WIDE SCALE ADOPTION OF SATELLITE BASED SERVICES IN EUROPE
Alexandra Jercaianu, EURISY, France

IAC-19.B5.2.3
HIGHLY RESPONSIVE SPACE AND GROUND SYSTEMS: NEW OPPORTUNITIES FOR DISASTERS MANAGEMENT
Gil Denis, Airbus Defence and Space, France

IAC-19.B5.2.4 (withdrawn)
THE JOHN GLENN HUMANITARIAN OBSERVATORY'S END-TO-END PROBLEM-SOLVING FOR CHALLENGES IN HEALTH SECURITY, WATER QUALITY, AND HUMAN MIGRATION/DISPLACEMENT
Elizabeth Newton, The Ohio State University, United States

IAC-19.B5.2.5
THE ATLANTIC OCEAN AND SPACE APPLICATIONS
Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom

IAC-19.B5.2.6 (withdrawn)
RESULTS OF THE FIELD-TRIALS OF THE THE WILDLAND FIRE REMOTE SENSING (FIRE-RS) PROJECT
Fernando Aguado Agelet, University of Vigo, Spain

IAC-19.B5.2.7
SPACE-ENABLED INTEGRATED DECISION SUPPORT SYSTEMS FOR POSTHARVEST LOSS
Adebola Olufunke, Georgia Institute of Technology, Atlanta, United States

IAC-19.B5.2.8
DESERTIFICATION IN NIGERIA: A PRODUCT OF CLIMATE CHANGE OR HUMAN ACTIVITIES? A CASE OF DESERT ENCROACHMENT MONITORING IN NORTH-EASTERN NIGERIA USING REMOTE SENSING TECHNIQUES
Esther Ibrahim, National Space Research and Development Agency (NSRDA), Abuja Nigeria, Nigeria

IAC-19.B5.2.9
GEOSPATIAL SURFACE WATER SUITABILITY ASSESSMENT FOR SMALL IRRIGATION SCHEMES TOWARDS INCREASED LOCAL FOOD PRODUCTION IN NIGERIA: A CASE OF JOS EAST LGA. PLATEAU STATE.
Esther Ibrahim, National Space Research and Development Agency (NSRDA), Abuja Nigeria, Nigeria

IAC-19.B5.2.10
ROBUST FOREST CLASSIFICATION USING HYPERSPECTRAL IMAGING, LASER SCANNING AND SATELLITE IMAGERY
Vasilii Mosin, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.B5.2.11 (non-confirmed)
IDENTIFICATION OF POTENTIAL SOLAR ENERGY FARMS IN SINDH, PAKISTAN USING GEOSPATIAL DATA AND MCDA
Saad Malik, Institute of Space Technology (IST), Pakistan

B5.3. Satellite Commercial Applications

October 25 2019, 13:30 — 140B

Co-Chair(s): John M. Horack, The Ohio State University College of Engineering, United States; Dengyun Yu, China Aerospace Science and Technology Corporation (CASC), China;
Rapporteur(s): Samuel Malloy, The Ohio State University, United States;

IAC-19.B5.3.1
KEYNOTE: THERMCERT - A SIGNATURE COMMERCIAL SPACE APPLICATION TO TACKLE FUEL-POVERTY IN THE UNITED KINGDOM
Steve Lee, Stevenson Astrosat, United Kingdom

IAC-19.B5.3.2
BEST PRACTICES FOR THE LAUNCH MANAGEMENT OF COMMERCIAL NANOSATELLITES
Stefano Rossi, Astrocast SA, Switzerland

IAC-19.B5.3.3
AN EVALUATION OF THE CHINESE PRIVATE SATELLITE SECTOR
Irina Liu, IDA Science and Technology Policy Institute, United States

IAC-19.B5.3.4
STRIVING – IN-ORBIT VALIDATION AS A SERVICE
Alessandro Avanzi, Sitael Spa, Italy

IAC-19.B5.3.5
EVALUATION OF BUSINESS OPPORTUNITIES GENERATED BY DEPLOYMENT OF LEO MEGA-CONSTELLATIONS
Ighor Uzhinsky, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.B5.3.6
SPACE FOR ALL: HOW TO CONNECT SPACE AND SOCIETY RAISING AWARENESS ON SATELLITE APPLICATIONS FOR SOCIETAL NEEDS
Alessandra Vernile, EURISY, France

IAC-19.B5.3.7
EXPLORING NEW FRONTIERS IN APPLICATIONS BY LEVERAGING PARTNERSHIPS WITH COMMERCIAL AND NON-GOVERNMENTAL ORGANIZATIONS
Jamie Favors, National Aeronautics and Space Administration (NASA), United States

IAC-19.B5.3.8
SOCIO-ECONOMIC BENEFITS OF SPACE ACTIVITIES IN THE ASIA-PACIFIC AND AFRICAN REGION IN THE 21ST CENTURY : A CASE STUDY BASED ON EARTH OBSERVATION SATELLITES
Adhithiyan Neduncheran, University of Petroleum and Energy Studies, India

IAC-19.B5.3.9 (withdrawn)
THE THEOS-2 SMALL SATELLITE AND TECHNOLOGY TRANSFER PROGRAM
LIKHIT WARANON, Geo-Informatics and Space Technology Development Agency (Public Organization), Thailand

B6. IAF SPACE OPERATIONS SYMPOSIUM

Coordinator(s): John Auburn, RHEATECH Ltd, United Kingdom; Otfrid Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;

B6.1. Ground Operations - Systems and Solutions

October 25 2019, 09:45 — 140B

Co-Chair(s): Sean Burns, Eumetsat, Germany; Thierry Levoir, CNES, France;
Rapporteur(s): Carlo Mirra, Airbus Defence & Space, Germany;

IAC-19.B6.1.1
REINVENTING SPACE OPERATIONS TO ENABLE THE NEWSPACE INDUSTRY
Guillaume Tanier, Telespazio VEGA Deutschland GmbH, Germany

IAC-19.B6.1.2
FROM APOLLO TO AMAZON – GROUND CONTROL CHANGING
Marcin Gnat, DLR (German Aerospace Center), Germany

IAC-19.B6.1.3
CUBESAT CONTROL CENTRE: A DEVELOPMENT OF AN EDUCATIONAL CONTROL CENTRE TO SUPPORT CUBESAT SPACE OPERATIONS
Antonio Esposito, Politecnico di Torino, Italy

IAC-19.B6.1.4
APSCO GROUND STATION NETWORK DESIGN AND APPLICATION
Shiwang Xing, Beihang University, China

IAC-19.B6.1.5
GROUND STATION AND INFRASTRUCTURE DEVELOPMENT AT THE UNIVERSITY OF ALABAMA, TUSCALOOSA
Christopher Simpson, The University of Alabama, United States

IAC-19.B6.1.6
VIRTUAL GROUND STATION FOR AUTOMATED SPACECRAFT OPERATIONS
Varsha Parthasarathy, University of Manitoba, Canada

IAC-19.B6.1.7
SATELLITE FLIGHT DYNAMICS ACTIVITIES SUPPORTED BY OPTICAL OBSERVATIONS, LESSONS LEARNT FROM OPERATIONAL EXPERIENCE
Noelia Sánchez-Ortiz, Deimos Space S.L., Spain

IAC-19.B6.1.8
SIRIUS PRODUCT LINE: RETROSPECTIVE AND FEEDBACK ON THE DEVELOPMENT OF FLIGHT DYNAMICS SYSTEMS
Jesus Esteban-Dones, Centre National d'Etudes Spatiales (CNES), France

IAC-19.B6.1.9
ISS NATIONAL LAB RESOURCE UTILIZATION AND PLANNING
Joshua Tullos, International Space Station (ISS) U.S. National Laboratory, United States

IAC-19.B6.1.10
A FISH-EYE APPROACH TO FLOCKS LEOP-ING
Francesco Stigliano, Leaf Space s.r.l., Italy

IAC-19.B6.1.11 (withdrawn)
DEVELOPMENT AND INTEGRATION OF A DATA OPERATIONS AND RECONFIGURATION INTERFACE
Lukas Grillmayer, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.B6.1.12
THE CHINA-BRAZIL EARTH RESOURCES SATELLITE - CBERS-4A: A PROPOSAL FOR GROUND SEGMENT BASED ON THE SPACE LINK EXTENSION PROTOCOL SERVICES.
Antonio Cassiano Julio Filho, Instituto Nacional de Pesquisas Espaciais (INPE), Brazil

B6.2. New Space Operations Concepts and Advanced Systems

October 21 2019, 15:00 — 140B

Co-Chair(s): Mario Cardano, Thales Alenia Space France, Italy; Thomas Kuch, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;
Rapporteur(s): Bobby Watkins, NASA MSFC, United States;

IAC-19.B6.2.1
DISAGGREGATED CONSTELLATION OPTIMIZATION APPLIED TO ENVIRONMENTAL MONITORING
Katherine Wagner, Virginia Polytechnic Institute and State University, United States

IAC-19.B6.2.2
AUTOMATED CONSTELLATION MANAGEMENT WITH SELF-REGULATING DATA-ECONOMIC ACTORS
Volker Schaus, TU Braunschweig, Institute of Space Systems, Germany

IAC-19.B6.2.3
CLOSING THE SATELLITE OPERATIONS LOOP WITH AUTOMATION VIA AUTOBOT
Mirue Choi, Planet, Germany

IAC-19.B6.2.4
AI, BIG DATA AND MACHINE LEARNING ALGORITHMS IN SATELLITE OPERATION
Roee Penso, IAI MBT Space, Israel

IAC-19.B6.2.5
PROTOTYPING OPERATIONAL AUTONOMY FOR SPACE TRAFFIC MANAGEMENT
Sreeja Nag, NASA Ames Research Center, United States

IAC-19.B6.2.6
MULTIFUNCTIONAL SPACE TRAFFIC MANAGEMENT ARCHITECTURE FOR SAFETY AND CONTROL OF SATELLITE CONSTELLATIONS
Marshall Kaplan, Launchspace Technologies Corporation, United States

IAC-19.B6.2.7
INNOVATIVE NEO SEARCH STRATEGY USING SPACE TELESCOPE
Toshifumi Yanagisawa, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.B6.2.8
THE OPERATIONS CONCEPT FOR TANDEM-L – FROM MISSION GOALS TO SPACECRAFT REQUIREMENTS
Daniel Schulze, DLR (German Aerospace Center), Germany

IAC-19.B6.2.9 (withdrawn)
AN INTEGRATED OPERATIONS MODEL FOR PERFORMANCE ANALYSIS OF ISRU LUNAR BASE CONCEPTS
Alex Austin, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.B6.2.10
TECHNICAL CONCEPT OF TRANSPORT SPACECRAFT INTENDED FOR ON-ORBIT SERVICING
Dmitriy Halaburda, Yuzhnoye State Design Office, Ukraine

IAC-19.B6.2.11
HIGH EFFICIENCY AUTOMATIC SCHEDULER FOR A GROUND SEGMENT AS A SERVICE PLATFORM
Davide Melli, Leaf Space s.r.l., Italy

IAC-19.B6.2.12
AN OPTIMIZED ACCEPTANCE TEST PLAN FOR MICRO AND NANO SATELLITES
Kah How Teo, Nanyang Technological University, Singapore, Republic of

B6.3. Mission Operations, Validation, Simulation and Training

October 24 2019, 14:45 — 140B

Co-Chair(s): Paolo Ferri, European Space Agency (ESA), Germany; Zeina Mounzer, Telespazio VEGA Deutschland GmbH, Germany;
Rapporteur(s): Borre Pedersen, Kongsberg Satellite Services AS, Norway;

IAC-19.B6.3.1
NEW OPERATIONAL CONCEPT FOR GAIA, INTEGRAL & XMM-NEWTON
Norbert Pfeil, Terma GmbH, Germany

IAC-19.B6.3.2
ATTITUDE AND ORBIT CONTROL OF THE GRACE SATELLITES AT EXTREMELY LOW POWER
Sebastian Löw, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.B6.3.3
OPERATIONAL SOLUTION FOR ELECTRIC PROPULSION INCLUSION IN A TWO TON COMMUNICATIONS SATELLITE
Anuradha Prakasha, Indian Space Research Organization (ISRO), India

IAC-19.B6.3.4
THE FIRST HTV SMALL RE-ENTRY CAPSULE (HSRC) OPERATION HIGHLIGHT WITH REGARD TO CREW'S ASSEMBLY AND REENTRY.
Yuichiro Nogawa, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.B6.3.5
MISSION OPERATIONS TO THE MOON, CHALLENGES OF COST EFFECTIVE LUNAR MISSION OPERATIONS.
Gabriele Conti, Space Applications Services, Belgium

IAC-19.B6.3.6
SCIENCE AND EXPLORATION OF THE MOON ENABLED BY SURFACE TELEROBOTICS
Erik Seedhouse, Embry-Riddle Aeronautical University, United States

IAC-19.B6.3.7
AERIAL VEHICLES FOR THE INSPECTION OF A MARTIAN SURFACE SETTLEMENT AND WEATHER FORECAST: TESTING AND CONSIDERATIONS FOR USE
Paolo Guardabasso, ISAE-Supaero University of Toulouse, France

IAC-19.B6.3.8
A MULTI-AGENT SPACECRAFT AUTONOMY SOFTWARE ARCHITECTURE FOR FORMATION FLYING MISSIONS
Elena Sorina Lupu, California Institute of Technology, United States

IAC-19.B6.3.9
PLANNING AND SCHEDULING IN AN ENABLED WORLD
Robin Steel, Telespazio VEGA Deutschland GmbH, Germany

IAC-19.B6.3.10
MULTI-AGENT PLANNING UNDER COMPLEX CONSTRAINS FOR SMALL PROBES GROUP IN DEEP-SPACE EXPLORATION TASK
Yuting Zhao, Beijing Institute of technology(BIT), China

IAC-19.B6.3.11
OPEN SOURCE LEO MISSION CONTROL SYSTEM IS GOING TO THE MOON
Mathieu Schmitt, Space Applications Services N.V., Belgium

IAC-19.B6.3.12
UTILIZATION OF UNSUPERVISED ANOMALIES DETECTOR AS A TOOL FOR MANAGING THE TRACKING AND DATA RELAY SATELLITE (TDRS) CONSTELLATION AT GODDARD SPACE FLIGHT CENTER (GSFC)
Kenneth Ma, NASA GSFC, United States

B6.IP. Interactive Presentations - IAF SPACE OPERATIONS SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): John Auburn, RHEATECH Ltd, United Kingdom; Otfrid Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;

IAC-19.B6.IP.1
SARDINIA DEEP SPACE ANTENNA: CURRENT PROGRAM STATUS AND RESULTS
Giuseppe Valente, Italian Space Agency (ASI), Italy

IAC-19.B6.IP.2
ON IMPROVING AN EMBEDDED SOLUTION FOR THE ASAP AUTONOMOUS PLANNING SYSTEM
Anselm Krainovic, University of Würzburg, Germany

IAC-19.B6.IP.3
ARTIFICIAL INTELLIGENCE MEETS MISSION CONTROL: THEORY AND APPLICATION OF DYNAMIC BAYESIAN NETWORKS
Lilli Bullinger, Goethe University Frankfurt, Germany

IAC-19.B6.IP.4
ONBOARD ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FOR ENHANCING SMALLSAT CONSTELLATIONS
Christopher Heistand, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.B6.IP.5
ANTENNA SCHEDULING AND DECONFLICTION USING MULTI-OBJECTIVE OPTIMIZATION FOR MULTIPLE MISSIONS
Christopher Barsoum, The Aerospace Corporation, United States

IAC-19.B6.IP.6
AUTONOMOUS SECURITY BOT FOR SPACE OPERATIONS: CHALLENGES AND BENEFITS
Ali Baghchehsara, TU Clausthal, Germany

IAC-19.B6.IP.7
CUBESAT ENERGY MODELLING FOR IMPROVED MISSION PLANNING AND OPERATIONS
Andreas Freimann, University of Würzburg, Germany

IAC-19.B6.IP.8
AUTOMATIC MISSION PLAN GENERATOR SYSTEM
Salvador Daniel Escobedo Casillas, University of Guadalajara, Mexico

IAC-19.B6.IP.9
USING UX DESIGN TECHNIQUES TO INCREASE THE EFFICIENCY AND CONFIDENCE OF MISSION OPERATORS
Sean Stellingwerff, Telespazio VEGA Deutschland GmbH, Germany

IAC-19.B6.IP.10
THE ANALYSIS AND POTENTIAL OF HIGH RELIABILITY ORGANIZATION PRINCIPLES IN NOAA SATELLITE OPERATIONS
Jason Long, National Oceanic and Atmospheric Administration (NOAA), United States

IAC-19.B6.IP.11
OPTIMIZED CONTACT SCHEDULING FOR NOAA SEARCH AND RESCUE
Ella Herz, Orbit Logic, United States

IAC-19.B6.IP.12 (withdrawn)
DESIGN OF GUI FOR COST-EFFECTIVE ATTITUDE ANALYSIS OF SATELLITE
Miri Jeong, Korea University of Science & Technology (UST), Korea, Republic of

IAC-19.B6.IP.13
GEOSTATIONARY SATELLITE LIFETIME MAXIMIZATION BY CONTROLLING PROPELLANT TANK TEMPERATURES - AN OPERATIONAL CASE.
Henrique Oliveira da Mata, Comando de Operações Aeroespaciais, Brazil

C1. IAF ASTRODYNAMICS SYMPOSIUM

Coordinator(s): Anna Guerman, Centre for Mechanical and Aerospace Science and Technologies (C-MAST), Portugal; Daniel Scheeres, Colorado Center for Astrodynamics Research, University of Colorado, United States;

C1.1. Mission Design, Operations & Optimization (1)

October 21 2019, 15:00 — 150A

Co-Chair(s): Massimiliano Vasile, University of Strathclyde, United Kingdom; Vincent Martinot, Thales Alenia Space France;
Rapporteur(s): Richard Epenoy, Centre National d'Etudes Spatiales (CNES), France;

IAC-19.C1.1.1
RIEMANNIAN OPTIMIZATION FOR SPACECRAFT TRAJECTORY DESIGN
Kyosuke Asaki, Kyushu University, Japan

IAC-19.C1.1.2
LOW-THRUST TRAJECTORY OPTIMISATION THROUGH DIFFERENTIAL DYNAMIC PROGRAMMING METHOD BASED ON KEPLERIAN ORBITAL ELEMENTS
Marco Nugnes, Politecnico di Milano, Italy

IAC-19.C1.1.3
CONCEPTS AND APPLICATIONS OF AERODYNAMIC ATTITUDE AND ORBITAL CONTROL FOR SPACECRAFT IN VERY LOW EARTH ORBIT
Sabrina Livadiotti, The University of Manchester, United Kingdom

IAC-19.C1.1.4
FLEX TANDEM WITH SENTINEL-3
Itziar Barat, ESA - European Space Agency, The Netherlands

IAC-19.C1.1.5
NEW EARTH OBSERVATION MULTI-SATELLITE MISSION CONCEPTS AND SPACE ARCHITECTURES FOR DISASTER RISK REDUCTION
Stefania Cornara, Deimos Space S.L., Spain

IAC-19.C1.1.6
OPTIMIZATION OF TRANSFER SCHEMES BETWEEN PASSIVE SPACE OBJECTS IN GEO VICINITY
Andrey Baranov, Keldysh Institute of Applied Mathematics of RAS, Russian Federation

IAC-19.C1.1.7
CONSTRAINT ANALYSIS FOR SERVICING CO-LOCATED SATELLITES
Manwei Chan, MIT, United States

IAC-19.C1.1.8
TRAJECTORY OPTIMIZATION USING MIXED MINIMUM-ERROR AND MINIMUM-FUEL COST FUNCTIONS
Erica Jenson, University of Colorado Boulder, United States

IAC-19.C1.1.9
TRAJECTORY OPTIMIZATION IN THE THREE-BODY PROBLEM FOR A LUNAR TRANSPORTATION SYSTEM
Mauro Viturro Balufo, SUPAERO- Ecole Nationale Supérieure de l'Aéronautique et de l'Espace, France

IAC-19.C1.1.10
LOW-THRUST TRAJECTORY DESIGN FOR A CISLUNAR CUBESAT LEVERAGING STRUCTURES FROM THE BICIRCULAR RESTRICTED FOUR-BODY PROBLEM
Robert Pritchett, Purdue University, United States

IAC-19.C1.1.11
MISSION DESIGN FOR CLOSE-RANGE LUNAR MAPPING BY QUASI-FROZEN ORBITS
Sandeep Singh, Texas A&M University, United States

IAC-19.C1.1.12
FORMATION RECONFIGURATION AND SCIENCE PLANNING ARCHITECTURE FOR THE IRASSI SPACE INTERFEROMETER
Luisa Buinhas, Bundeswehr University Munich, Germany

C1.2. Mission Design, Operations & Optimization (2)

October 22 2019, 09:45 — 150A

Co-Chair(s): Michèle Lavagna, Politecnico di Milano, Italy; Stéphanie Lizy Destrez, SUPAERO- Ecole Nationale Supérieure de l'Aéronautique et de l'Espace, ;
Rapporteur(s): Yury Razoumny, Peoples's Friendship University of Russia, Russian Federation;

IAC-19.C1.2.1
MULTI-OBJECTIVE ROBUST TRAJECTORY OPTIMISATION UNDER EPISTEMIC UNCERTAINTY AND IMPRECISION
Simão Marto, University of Strathclyde, United Kingdom

IAC-19.C1.2.2
EFFECTS OF MOMENTUM TRANSFER DEFLECTION EFFORTS ON SMALL BODY ROTATIONAL STATE
Daniel Brack, Colorado Center for Astrodynamics Research, University of Colorado, United States

IAC-19.C1.2.3
EFFICIENT MAIN BELT ASTEROID TOUR EXPLOITING SUN-EARTH LIBRATION POINT DEPARTURE
Jacopo Prinetto, Politecnico di Milano, Italy

IAC-19.C1.2.4
LANDING SITE SELECTION AND LANDING DISPERSION ANALYSIS FOR THE HAYABUSA2 MISSION
Shota Kikuchi, Japan Aerospace Exploration Agency (JAXA), ISAS, Japan

IAC-19.C1.2.5
DESTINY+ LOW THRUST TRAJECTORY DESIGN FROM EARTH ORBIT TO ASTEROIDS FLYBY
Takayuki Yamamoto, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C1.2.6
OPTIMAL AND ROBUST TRAJECTORY DESIGN USING REINFORCEMENT LEARNING UNDER SYSTEM AND OPERATION UNCERTAINTIES
Takuya Chikazawa, University of Tokyo, Japan

IAC-19.C1.2.7
ARTIFICIAL NEURAL NETWORK FOR PRELIMINARY MULTIPLE NEA RENDEZVOUS MISSION USING LOW THRUST
Giulia Viavattene, University of Glasgow, United Kingdom

IAC-19.C1.2.8
GRAVITY-ASSIST FUEL-OPTIMAL TRAJECTORY DESIGN USING HYPERBOLIC TANGENT SMOOTHING
Vishala Arya, Texas A&M University, United States

IAC-19.C1.2.9 (withdrawn)
VENERA-D MISSION DESIGN
Irina Kovalenko, Space Research Institute (IKI), Russian Academy of Sciences (RAS), Russian Federation

IAC-19.C1.2.10
HYBRID TRAJECTORIES OPTIMIZATION FOR INTERPLANETARY MISSIONS – THE MSR-ERO CASE
Enrique Babio, Deimos Space SLU, Spain

IAC-19.C1.2.11
TRAJECTORY DESIGN OF THE LUCY MISSION TO EXPLORE THE DIVERSITY OF THE JUPITER TROJANS
Jacob Englander, NASA Goddard Space Flight Center Greenbelt MD 20771, United States

IAC-19.C1.2.12
ANALYTICAL OPTIMAL SOLUTION OF REACHABLE DOMAIN FOR LOW-THRUST TRAJECTORIES BASED ON MINIMUM PRINCIPLE
Zhaowei Wang, Tsinghua University, Beijing, China

C1.3. Orbital Dynamics (1)

October 22 2019, 14:45 — 150A

Co-Chair(s): Laureano Cangahuala, Jet Propulsion Laboratory, United States; Antonio Prado, National Institute for Space Research - INPE, Brazil;
Rapporteur(s): Xiaoqian Chen, National University of Defense Technology, China;

IAC-19.C1.3.1
TIME CHARACTERIZATION OF THE COUPLED SOLAR RADIATION PRESSURE-PLANETARY OBLATENESS DYNAMICS
Elisa Maria Alessi, IFAC-CNR, Italy

IAC-19.C1.3.2
CHARACTERIZATION OF 6DOF NATURAL AND CONTROLLED RELATIVE DYNAMICS IN CISLUNAR SPACE
Francesco Colombi, Politecnico di Milano, Italy

IAC-19.C1.3.3 (withdrawn)
INVARIANT STRUCTURES AND LONG TERM CONFINEMENT OF CAPTURED ASTEROIDS NEAR THE EARTH
Priscilla Sousa Silva, Saõ Paulo State University (UNESP), Brazil

IAC-19.C1.3.4
NON-UNIFORM GRAVITY FIELD MODEL ON BOARD LEARNING DURING SMALL BODIES PROXIMITY OPERATIONS
Andrea Pasquale, Politecnico di Milano, Italy

IAC-19.C1.3.5
STABILITY INDICATOR OF ORBITAL MOTION AROUND ASTEROIDS WITH AUTOMATIC DOMAIN SPLITTING
Feng Jinglang, Nanjing University, China

IAC-19.C1.3.6
IMPACT OF THE VARIATION IN THE MODELLING OF A BINARY ASTEROID SYSTEM ON THE RESTRICTED FULL THREE BODY PROBLEM
Isabelle Jean, McGill University, Canada

IAC-19.C1.3.7
HAYABUSA2 MISSION'S SMALL CARRY-ON IMPACTOR OPERATION: EJECTA'S BOUNCING TRAJECTORIES ON RYUGU AND ON-ORBIT COLLISION MECHANISM
Alessandro Latino, Politecnico di Milano, Italy

IAC-19.C1.3.8
ACCURATE AND EFFICIENT PROPAGATION OF SATELLITE ORBITS IN THE TERRESTRIAL GRAVITY FIELD
Amna Adheem, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-19.C1.3.9
STATION KEEPING AND FORMATION FLYING OF REFLECTIVITY CONTROL SOLAR SAILS AT SUN-EARTH L2 POINT BY ARTIFICIAL EQUILIBRIUM POINT APPROACH
Yuichiro Nada, University of Tokyo, Japan

IAC-19.C1.3.10
LINEARIZED SDE FOR PROPAGATING DENSITY MODEL UNCERTAINTY
Srinivas J. Setty, Germany

IAC-19.C1.3.11
ANALYSIS OF PROPER ORBITAL ELEMENT FOR RESIDENT SPACE OBJECTS
Di Wu, University of Arizona, United States

IAC-19.C1.3.12
CHARGED-SPACECRAFT FORMATION: MANIFOLDS, DEPLOYMENT AND RECONFIGURATION
Mingpei Lin, Beihang University (BUAA), China

IAC-19.C1.3.13 (withdrawn)
HOMOCLINIC/HETEROCLINIC ORBITS IN FOMATION CONTROLLED BY ARTIFICIAL POTENTIAL FUNCTION
Xiao Pan, Beijing University of Aeronautics and Astronautics (BUAA), China

C1.4. Orbital Dynamics (2)

October 23 2019, 09:45 — 150A

Co-Chair(s): Gerard Gomez, University of Barcelona, Spain; Kathleen Howell, Purdue University, United States;
Rapporteur(s): Feng-Tai Hwang, National Space Organization, Taipei;

IAC-19.C1.4.1
KEYNOTE: ASTRODYNAMICS OF LUNAR AND CIS-LUNAR MISSIONS
David C. Folta, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States

IAC-19.C1.4.2
MANIFOLD-TO-MANIFOLD TRANSFERS USING LOW-THRUST ACCELERATION
Yuri Hachiya, Kyushu University, Japan

IAC-19.C1.4.3
DESIGN OF LOW-ENERGY CAPTURE TRAJECTORIES IN THE ELLIPTIC RESTRICTED FOUR-BODY PROBLEM
Stefano Carletta, Sapienza University of Rome, Italy

IAC-19.C1.4.4
SUN-EARTH LIBRATION POINTS TRANSFERS THROUGH EARTH-MOON GRAVITY ASSIST
Lorenzo Bucci, Politecnico di Milano, Italy

IAC-19.C1.4.5
THE DYNAMICS OF STATIONKEEPING STRATEGIES AROUND LIBRATION POINT ORBITS
Ariadna Farres, NASA Goddard/University of Maryland, Baltimore County (UMBC), United States

IAC-19.C1.4.6
CONTRIBUTIONS OF VENUS SWING-BY MANEUVER IN EARTH-MARS TRANSFERS
Maisa Terra, Instituto Tecnológico de Aeronáutica (ITA), Brazil

IAC-19.C1.4.7
ORBIT DESIGN AND MAINTENANCE IN THE ELLIPTICAL HILL PROBLEM WITH APPLICATIONS TO THE PHOBOS SAMPLE RETURN MISSION MMX
Nicola Baresi, Surrey Space Centre, University of Surrey, United Kingdom

IAC-19.C1.4.8
PSYCHE MISSION: DYNAMICS ON AND NEARBY THE TARGET
Othon Winter, UNESP - São Paulo Sate University, Brazil

IAC-19.C1.4.9
HIGH-ORDER RESONANT ORBIT MANIFOLD EXPANSIONS FOR MISSION DESIGN IN THE PLANAR CIRCULAR RESTRICTED 3-BODY PROBLEM
Bhanu Kumar, Georgia Institute of Technology, United States

IAC-19.C1.4.10
CHARACTERIZATION OF LOW-ENERGY ORBITS FOR THE EXPLORATION OF PLANETARY SYSTEMS
Francisco Salazar, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-19.C1.4.11
HUMAN AGENT PLANNING FOR SPACECRAFT MOTION SUBJECT TO CHAOTIC DYNAMICS, SMALL RANDOM PERTURBATIONS AND UNKNOWN PARAMETERS
Davide Guzzetti, Auburn University, United States

C1.5. Attitude Dynamics (1)

October 23 2019, 14:45 — 150A

Co-Chair(s): Shinji Hokamoto, Kyushu University, Japan; Gianmarco Radice, Singapore, Republic of;
Rapporteur(s): Giovanni B. Palmerini, Sapienza University of Rome, Italy;

IAC-19.C1.5.1
SWOT: AN AOCS ANSWERING TO HIGH PAYLOAD CONSTRAINTS
Bertrand RAFFIER, Centre National d'Etudes Spatiales (CNES), France

IAC-19.C1.5.2
IMPACT OF STRAIN-ACTUATED ATTITUDE CONTROL SYSTEMS FOR VARIANT MISSION CLASSES
FNU Vedant, University of Illinois, United States

IAC-19.C1.5.3
ON THE ATTITUDE CONTROL BY THRUSTER OF A SPINNING SOLAR SAIL AND BENDING MOMENT'S EFFECT ANALYSIS
Roger Bertran Rabat, Department of Engineering ,The University of Tokyo, Spain

IAC-19.C1.5.4
SEMI-ANALYTICAL APPROACH TO FASTEN COMPLEX AND FLEXIBLE POINTING STRATEGIES DEFINITION FOR NANOSATELLITE CLUSTERS: THE HERMES MISSION CASE FROM DESIGN TO FLIGHT
Andrea Colagrossi, Politecnico di Milano, Italy

IAC-19.C1.5.5
DETUMBLING AND ATTITUDE CONTROL OF CUBESATS VIA MULTI-MODEL BASED EMBEDDED OPTIMIZATION
Burak Omer Iskender, Nanyang Technological University, Singapore, Republic of

IAC-19.C1.5.6
MODEL PREDICTIVE STEERING CONTROL LAW FOR DOUBLE-GIMBAL SCISSORED PAIRS OF CONTROL MOMENT GYROS
Hirohisa Kojima, Tokyo Metropolitan University, Japan

IAC-19.C1.5.7
CONTROL OF AN OVER-ACTUATED SPACECRAFT USING A COMBINATION OF A FLUID ACTUATOR AND REACTION WHEELS
Sebastian Grau, Technische Universität Berlin, Germany

IAC-19.C1.5.8
FORWARD DYNAMICS ALGORITHM FOR ORIGAMI-FOLDED DEPLOYABLE SPACECRAFT STRUCTURES
JoAnna Fulton, University of Colorado Boulder, United States

IAC-19.C1.5.9
COUPLED MOTION DETERMINATION AND STABILIZATION OF A SATELLITE EQUIPPED WITH LARGE FLEXIBLE ELEMENTS USING ADCS ONLY
Danil Ivanov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

IAC-19.C1.5.10 (withdrawn)
MINIMUM JERK ATTITUDE SLEW MANEUVERS
Arland Thompson, Raytheon, United States

IAC-19.C1.5.11
DESIGN AND HARDWARE-IN-THE-LOOP TEST OF AN ACTIVE MAGNETIC DETUMBLING AND POINTING CONTROL BASED ONLY ON THREE-AXIS MAGNETOMETER DATA
Mohamed Salim Farissi, Sapienza University of Rome, Italy

IAC-19.C1.5.12
EXPERIMENTAL VALIDATION OF AGILE ATTITUDE CONTROL WITH SINC FUNCTION-BASED PROFILER FOR REDUCING RESIDUAL VIBRATIONS
Toshio Kamiya, NEC Corporation, Japan

C1.6. Attitude Dynamics (2)

October 24 2019, 09:45 — 150A

Co-Chair(s): James O'Donnell, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States; Paolo Teofilatto, Sapienza University of Rome, Italy;
Rapporteur(s): Toshio Kamiya, NEC Corporation, Japan;

IAC-19.C1.6.1
EUCLID DARK UNIVERSE MISSION – HIGH STABILITY AND POINTING PERFORMANCE CONTROL
Raúl Sánchez Maestro, SENER Ingenieria y Sistemas, S.A., Spain

IAC-19.C1.6.2
ANALYTIC SPACECRAFT ATTITUDE AND RATE ESTIMATION PERFORMANCE DURING ATTITUDE SENSOR OUTAGES
Joseph Galante, NASA Goddard Space Flight Center Greenbelt MD 20771, United States

IAC-19.C1.6.3
ON THE MANAGEMENT OF THE SATELLITE ANGULAR MOMENTUM TAKING ADVANTAGE OF EXTERNAL TORQUES
Ivan Sumelzo Martinez, Thales Alenia Space France, France

IAC-19.C1.6.4
ATTITUDE CONTROL FOR THE LUMIO CUBESAT IN DEEP SPACE
Álvaro Romero-Calvo, Politecnico di Milano, Italy

IAC-19.C1.6.5
EXPERIMENTATION OF NONLINEAR SPACECRAFT ATTITUDE MOTION CONTROL VIA SUCCESSIVE LINEARIZATION BASED MODEL PREDICTIVE CONTROL
Burak Omer Iskender, Nanyang Technological University, Singapore, Republic of

IAC-19.C1.6.6
ATTITUDE GUIDANCE AND CONTROL FOR RAPID DEORBIT OF SPACE DEBRIS BY AERODYNAMIC DRAG
Takahiro Sasaki, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C1.6.7
A THREE-AXIS FLUID-DYNAMIC ATTITUDE CONTROL EXPERIMENT FOR SALSAT
Daniel Noack, Technische Universität Berlin, Germany

IAC-19.C1.6.8
ANALYZING THE STABILIZATION OF A TUMBLING SATELLITE USING FINITE ELEMENT METHODS
Ryotaro SAKAMOTO, University of Colorado Boulder, United States

IAC-19.C1.6.9
COORDINATED ATTITUDE DETERMINATION AND CONTROL IN A SWARM OF CUBESATS
Dmitry Pritykin, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.C1.6.10
ZERO PROPRLLANT MANEUVER PATH PLANNING OF SPACE SATTION UNDER MULTIPLE CONSTRAINTS
Zhuo Wang, Beijing Institute of Technology, China

IAC-19.C1.6.11
ANGULAR RATE DETERMINATION USING STAR SENSORS AND NOVEL ALGORITHMS BASED ON GEOMETRICAL INVESTIGATIONS
Dario Spiller, Sapienza University of Rome, Italy

IAC-19.C1.6.12
SLIDING MODE TECHNIQUES FOR PRECISE ATTITUDE CONTROL
Matteo Dentis, Politecnico di Torino, Italy

C1.7. Guidance, Navigation & Control (1)

October 24 2019, 14:45 — 150A

Co-Chair(s): Johannes Schoenmaekers, European Space Operations Centre, Germany; Moriba Jah, The University of Texas at Austin, United States;
Rapporteur(s): Jean de Lafontaine, NGC Aerospace Ltd., Canada;

IAC-19.C1.7.1
FLIGHT RESULTS OF GNC SYSTEM FOR ARTIFICIAL LANDMARK ACQUISITION IN HAYABUSA2 TOUCHDOWN OPERATION
Go Ono, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C1.7.2
GNC STRATEGY AND RESULTS OF HAYABUSA2 PINPOINT TOUCH DOWN OPERATION
Fuyuto Terui, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C1.7.3
GNC FLIGHT RESULTS OF HAYABUSA2 OPERATION FOR MASCOT RELEASE
Yuya Mimasu, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C1.7.4
LANDMARK-FREE OPTICAL NAVIGATION AROUND SMALL BODIES: APPLICATION TO THE HAYABUSA2 TOUCHDOWN ON RYUGU
Yuki Takao, The University of TOKYO, Graduate school, Japan

IAC-19.C1.7.5
PROBABILISTIC GUIDANCE OF A SWARM DEPLOYED FROM THE BACK SHELL OF THE MARS SPACECRAFT
Saptarshi Bandyopadhyay, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.C1.7.6
AUTONOMOUS NAVIGATION AND GUIDANCE FOR CUBESATS TO FLYBY NEAR-EARTH ASTEROIDS
Pablo Machuca, Cranfield University, United Kingdom

IAC-19.C1.7.7
THROTTLED EXPLICIT GUIDANCE FOR LUNAR AND PLANETARY PINPOINT LANDING
Takahiro Ito, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C1.7.8
FLIGHT DEMONSTRATION OF LIE-GROUP BASED NONLINEAR OPTIMAL CONTROL FOR A VEHICLE WITH ATTITUDE DYNAMICS (LIEQR)
Jake Panikulam, United States

IAC-19.C1.7.9
GNC FOR LUNAR ASCENT, ORBIT TRANSFER AND RENDEZVOUS IN NEAR-RECTILINEAR HALO ORBITS
Thomas Vincent Peters, GMV Innovating Solutions, Spain

IAC-19.C1.7.10 (withdrawn)
OVERVIEW OF THE GUIDANCE, NAVIGATION AND CONTROL SYSTEM OF THE TEAMINDUS LUNAR LANDER
Vishesh Vatsal, India

IAC-19.C1.7.11
HOVERING CONTROL OF A SPACECRAFT OVER A BINARY ASTEROID
Rodolfo Batista Negri, Instituto Nacional de Pesquisas Espaciais (INPE), Brazil

IAC-19.C1.7.12
HERA GNC SUBSYSTEM FOR DEEP SPACE AND ASTEROIDS PROXIMITY OPERATIONS
Andrea Pellacani, GMV Aerospace & Defence SAU, Spain

C1.8. Guidance, Navigation & Control (2)

October 25 2019, 09:45 — 150A

Co-Chair(s): Yong Chun Xie, Beijing Institute of Control Engineering, China Academy of Space Technology (CAST), China; Anton de Ruiter, Ryerson University, Canada;
Rapporteur(s): Miguel Bello Mora, Deimos Space S.L., Spain;

IAC-19.C1.8.1
GNC ARCHITECTURE FOR AN OPTIMAL RENDEZVOUS TO AN UNCOOPERATIVE TUMBLING TARGET USING PASSIVE MONOCULAR CAMERA
Renato Volpe, Sapienza University of Rome, Italy

IAC-19.C1.8.2 (withdrawn)
LINEAR COVARIANCE ANALYSIS FOR THE FINAL RENDEZVOUS PHASE OF THE MARS SAMPLE RETURN – EARTH RETURN ORBITER MISSION
Francesco Capolupo, Airbus Defence and Space, France

IAC-19.C1.8.3
AUTONOMOUS ORBIT CONTROL WITH ON-BOARD COLLISION RISK MANAGEMENT FOR LOW-EARTH ORBIT SATELLITES
Jerome Thomassin, Centre National d'Etudes Spatiales (CNES), France

IAC-19.C1.8.4
DUAL QUATERNION BASED AUTONOMOUS RENDEZVOUS AND DOCKING VIA MODEL PREDICTIVE CONTROL
Burak Omer Iskender, Nanyang Technological University, Singapore, Republic of

IAC-19.C1.8.5
NONLINEAR CONTROL WITH J2 AND DRAG PERTURBATIONS FOR NANOSATELLITE FORMATION FLIGHT
Mohd Bilal, University of Würzburg, Germany

IAC-19.C1.8.6
ASSESSMENT AND IMPLEMENTATION OF VIABLE NAVIGATION FILTER OPTIONS FOR CLOSE-PROXIMITY SATELLITE OPERATION USING VISUAL NAVIGATION
Noel Weber, Deutsches Zentrum fuer Luft- und Raumfahrt (DLR), Germany

IAC-19.C1.8.7
ASTROBATIC: A HOPPING-MANEUVER EXPERIMENT FOR A SPACECRAFT-MANIPULATOR SYSTEM ON BOARD THE INTERNATIONAL SPACE STATION
Marcello Romano, Naval Postgraduate School, United States

IAC-19.C1.8.8
VARIABLE-TIME-DOMAIN NEIGHBORING OPTIMAL GUIDANCE AND ATTITUDE CONTROL OF LOW-THRUST LUNAR ORBIT TRANSFERS
Mauro Pontani, Sapienza University of Rome, Italy

IAC-19.C1.8.9
DISTRIBUTED ROBUST CONSENSUS-BASED CONTROL WITH COLLISION AVOIDANCE FOR SATELLITE FORMATION FLYING
Julian Scharnagl, Zentrum für Telematik, Germany

IAC-19.C1.8.10
ENERGY-OPTIMAL RENDEZVOUS SPACECRAFT GUIDANCE VIA THEORY OF CONNECTIONS
Roberto Furfaro, University of Arizona, United States

IAC-19.C1.8.11 (withdrawn)
ROBUST FORMATION CONTROL IN LOW-EARTH-ORBIT USING SECTOR BOUNDS FOR J2 AND DRAG DISTURBANCES
Florian Kempf, University of Würzburg, Germany

IAC-19.C1.8.12
FUEL-EFFICIENT FORMATION FLYING OF AN OBSERVATORY AND EXTERNAL OCCULTER IN THE CIRCULAR RESTRICTED THREE-BODY PROBLEM
William Sanchez, Massachusetts Institute of Technology (MIT), United States

C1.9. Guidance, Navigation & Control (3)

October 25 2019, 13:30 — 150A

Co-Chair(s): Shoji Yoshikawa, Mitsubishi Electric Corporation, Japan; Igor V. Belokonov, Samara State Aerospace University, Russian Federation;
Rapporteur(s): Juan Carlos Bastante, OHB System AG-Bremen, Germany;

IAC-19.C1.9.1
CONTROL DESIGN & SENSITIVITY ANALYSIS FOR A DEPLOYABLE ENTRY VEHICLE WITH AERODYNAMIC CONTROL SURFACES
Benjamin Margolis, NASA Ames Research Center, United States

IAC-19.C1.9.2
AUTONOMOUS AND ADAPTIVE GUIDANCE FOR INTERPLANETARY TRAJECTORIES
Joe Peterson, Texas A&M University, United States

IAC-19.C1.9.3
MODEL PREDICTIVE STATIC PROGRAMMING FOR BANG-OFF-BANG LOW-THRUST NEIGHBORING CONTROL LAW DESIGN
Yang Wang, Politecnico di Milano, Italy

IAC-19.C1.9.4 (withdrawn)
INTEGRATED GUIDANCE AND CONTROL USING ONLINE REINFORCEMENT LEARNING FOR LAUNCH VEHICLE UPPER STAGE RECOVERY
Adhithya Babu, AgniKul Cosmos, India

IAC-19.C1.9.5
SUB-OPTIMAL THRUST MODULATION ALGORITHM FOR AUTONOMOUS SOFT LUNAR LANDING
Francesco Torre, Mantu Group, Italy

IAC-19.C1.9.6
POLARIZED SKYLIGHT-AIDED AUTONOMOUS NAVIGATION METHOD FOR MARS ROVERS
Yu Liu, Shanghai Institute of Spaceflight Control Technology, China

IAC-19.C1.9.7
MULTI-CONSTRAINED REAL-TIME ENTRY GUIDANCE USING DEEP NEURAL NETWORKS
Lin Cheng, Tsinghua University, China

IAC-19.C1.9.8
AUTONOMOUS OPTICAL NAVIGATION USING FPGA-BASED VECTOR CODE CORRELATION ALGORITHM FOR DEEP SPACE MISSIONS
Genki Ohira, The Graduate Universty for Advanced Studies[SOKENDAI], Japan

IAC-19.C1.9.9
AUTONOMOUS SPACE-BASED SHAPE ESTIMATION USING RANGE SENSORS
Islam Hussein, Applied Defense Solutions, Inc., United States

IAC-19.C1.9.10 (withdrawn)
MANIFOLD-BASED ROBUST STABILIZATION OF LIBRATION-POINT ORBIT WITH NAVIGATIONAL UNCERTAINTY
Yang Zhou, Kyushu University, Japan

IAC-19.C1.9.11
OPTIMAL GUIDANCE TRAJECTORIES FOR A NANOSATELLITE DOCKING WITH A TUMBLING RESIDENT SPACE OBJECT USING A HIGH FIDELITY J2 AND QUADRATIC DRAG PERTURBATIONS MODEL
Parv Patel, University of Southern California, United States

IAC-19.C1.9.12
FUEL-EFFICIENT DEEP REINFORCEMENT LEARNING FOR PLANETARY LANDING
RICHARD LINARES, Massachusetts Institute of Technology (MIT), United States

C1.IP. Interactive Presentations - IAF ASTRODYNAMICS SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Anna Guerman, Centre for Mechanical and Aerospace Science and Technologies (C-MAST), Portugal; Daniel Scheeres, Colorado Center for Astrodynamics Research, University of Colorado, United States;

IAC-19.C1.IP.1 (withdrawn)
PRECISE POWER DESCENT CONTROL OF SINGLE GIMBALLED THRUSTER MOON LANDER.
Rolando Cortés, CINVESTAV, Mexico

IAC-19.C1.IP.2 (withdrawn)
CAPABILITY ANALYSIS FOR MANIPULATOR-ACTUATED INTEGRATED TRANSLATIONAL AND ROTATIONAL CONTROL STRATEGY OF SPACECRAFT
Feng Zhang, China Academy of Launch Vehicle Technology(CALT), China

IAC-19.C1.IP.3
MULTIPLE ENTRY TRAJECTORY SCENARIOS FOR RETURNING FROM THE MOON: ADVANTAGES AND DISADVANTAGES
Dmitriy Grishko, Bauman Moscow State Technical University, Russian Federation

IAC-19.C1.IP.4
REINFORCEMENT LEARNING FOR SPACECRAFT ATTITUDE CONTROL
FNU Vedant, University of Illinois, United States

IAC-19.C1.IP.5
THE HIGH PERFORMANCE SATELLITE DYNAMICS SIMULATOR (HPS): A MODULAR MATLAB/SIMULINK-BASED SIMULATION LIBRARY FOR GNC SYSTEMS DEVELOPMENT
René Schwarz, German Aerospace Center (DLR), Germany

IAC-19.C1.IP.6 (withdrawn)
INVESTIGATING UN-STABILITY PHENOMENA AND CHAOTIC BEHAVIOR IN DEFLECTION OF POTENTIAL HAZARDOUS ASTEROID
Javad Shams, K. N. Toosi University of Technology, Iran

IAC-19.C1.IP.7
ESA F-CLASS COMET INTERCEPTOR: A FIRST CLOSE-UP STUDY OF A DYNAMICALLY "NEW" OBJECT
Joan Pau Sanchez Cuartielles, Cranfield University, United Kingdom

IAC-19.C1.IP.8 (withdrawn)
RESEARCH ON THE DYNAMIC LIQUID EQUILIBRIUM POSITION AND THE COMPOSITE EQUIVALENT MECHANICAL MODEL OF LARGE-AMPLITUDE LIQUID SLOSHING
Nan Miao, Zhengzhou University of Aeronautics, China

IAC-19.C1.IP.9 (withdrawn)
BUILDING INCLINATED AND EXCENTRIC HIGH EARTH ORBITS THROUGH SMALL PERTURBATIONS: A FOUR-BODY DYNAMICS EXPLORATION
Elbert E.N. Macau, Instituto Nacional de Pesquisas Espaciais (INPE), Brazil

IAC-19.C1.IP.10
CMOS BASED HIGH ACCURACY MINIATURIZED DIGITAL SUN SENSOR WITH OPTIMIZED ERROR COMPENSATION ON SONATE
Tom Baumann, University of Würzburg, Germany

IAC-19.C1.IP.11
HAYABUSA2 OPERATIONAL DESIGN AND EVALUATION OF MINERVAII-1A/B ROVERS DEPLOYMENT
Kent Yoshikawa, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C1.IP.12 (non-confirmed)
VIBRATION SUPPRESSION DURING CAPTURE OF A SPINNING SATELLITE USING INPUT SHAPING METHOD BASED ON NTSM CONTROL
Wenzheng Zhang, Shanghai Institute of Spaceflight Control Technology, China

IAC-19.C1.IP.13
RENDEZVOUS WITH SPINNING TARGET IN ELLIPTICAL ORBIT BY MODEL PREDICTIVE CONTROL
Zheng Hong Zhu, York University, Canada

IAC-19.C1.IP.14
MODELING AND SIMULATION OF POST-IMPACT DYNAMICS INTENDED FOR REAL-TIME IMPLEMENTATION ON SPACECRAFT ROBOTIC SERVICING AND ASSEMBLY MISSIONS
Anthony Wolosik, Naval Research Laboratory, United States

IAC-19.C1.IP.15
QUALITATIVE AND QUANTITATIVE CHARACTERISATION OF SOLUTIONS FOR THE LOW THRUST TRANSFER GTO TO GEO
Juan Carlos Bastante, OHB System AG-Bremen, Germany

IAC-19.C1.IP.16
DEVELOPMENT OF A HARDWARE-IN-THE-LOOP ATTITUDE CONTROL SIMULATOR FOR EIRSAT-1, A MAGNETICALLY ACTUATED 2U CUBESAT
Joseph Thompson, Student, Ireland

IAC-19.C1.IP.17 (withdrawn)
NEUROEVOLUTIONARY HEBBIAN-LEARNING FOR INTERPLANETARY TRAJECTORY DESIGN
Abishek Navukkarasan, AgniKul Cosmos, India

IAC-19.C1.IP.18
DEVELOPING ROBUST RENDEZVOUS AND PROXIMITY OPERATIONS CONTROL USING GENERATIVE-ADVERSARIAL MACHINE LEARNING
Lorraine Weis, L-3 Communications, United States

IAC-19.C1.IP.19
THE LIFETIME OF DUST PARTICLES IN THE PLUTO SYSTEM
Silvia Maria Giuliatti Winter, UNESP - Univ Estadual Paulista, Brazil

C2. IAF MATERIALS AND STRUCTURES SYMPOSIUM

Coordinator(s): Andreas Rittweger, DLR (German Aerospace Center), Germany; Paolo Gasbarri, Sapienza University of Rome, Italy;

C2.1. Space Structures I - Development and Verification (Space Vehicles and Components)

October 21 2019, 15:00 — 152B

Co-Chair(s): Alwin Eisenmann, IABG Industrieanlagen - Betriebsgesellschaft mbH, Germany; Andreas Rittweger, DLR (German Aerospace Center), Germany;
Rapporteur(s): Jochen Albus, ArianeGroup, Germany;

IAC-19.C2.1.1
DEVELOPMENT & TESTING OF THE SINGLE-PERSON SPACECRAFT CREW ENCLOSURE
Matthew Stephens, United States

IAC-19.C2.1.2
VERIFICATION OF A HYPERSONIC TEST PANEL THROUGH MODAL ANALYSIS OF TWO FINITE ELEMENT SOLVERS, AND VARIOUS ELEMENT TYPES AND FORMULATIONS
Erika Lieberknecht, United States

IAC-19.C2.1.3
FRACTURE CONTROL FOR ADDITIVELY MANUFACTURED SPACECRAFT STRUCTURES
Mark McElroy, National Aeronautics and Space Administration (NASA), United States

IAC-19.C2.1.4
MODELING OF ADDITIVE MANUFACTURED HEAT PIPES FOR ADVANCED SMALL SATELLITE DESIGN
Nikolay Mullin, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.C2.1.5
DEVELOPMENT OF H3 LAUNCH VEHICLE 1ST STAGE ENGINE SECTION STRUCTURE
Hiroki Hamajima, MHI, Japan

IAC-19.C2.1.6
ARIANE 6 UPPER LIQUID PROPULSION MODULE THERMAL PROTECTION HARDWARE DEVELOPMENT AND TESTING
Arturs Jasjukevics, ArianeGroup, Germany

IAC-19.C2.1.7
ABSORPTIVITY DETERMINATION OF SATELLITE MATERIALS FROM THE TRANSIENT HEATING PHASE OF A THERMAL-VACUUM TEST.
Claudio Paris, Centro Fermi - Museo Storico della Fisica e Centro Studi e Ricerche "Enrico Fermi", Italy

IAC-19.C2.1.8
DEVELOPMENT OF LARGE HIGH PRESSURIZED XENON TANK FOR ELECTRICAL PROPULSION SYSTEMS
Michael Spiegel, MT Aerospace AG, Germany

IAC-19.C2.1.9
A CONDENSATION APPROACH FOR VIRTUAL SHAKER TESTING PROCEDURES
Marcello Remedia, Surrey Space Centre, University of Surrey, United Kingdom

IAC-19.C2.1.10
NODE-DEPENDENT KINEMATIC MODELS FOR THE COUPLED LOAD ANALYSIS OF SPACE STRUCTURES
Enrico Zappino, Politecnico di Torino, Italy

IAC-19.C2.1.11
A NEW DEVICE AND METHOD FOR SIMULATING HYPERSONIC AEROTHERMAL ENVIRONMENT
Xiaoping Li, School of Astronautics,Northwestern Polytechnical University, China

IAC-19.C2.1.12
A PSEUDO METHOD FOR ESTIMATION OF ELASTIC PLASTIC BURST PRESSURE OF CYLINDRICAL PRESSURE VESSELS AND ITS EXPERIMENTAL VALIDATION.
Siva kumar Ganesan, Indian Space Research Organization (ISRO), India

C2.2. Space Structures II - Development and Verification (Deployable and Dimensionally Stable Structures)

October 22 2019, 09:45 — 152B

Co-Chair(s): Paolo Gasbarri, Sapienza University of Rome, Italy; Oliver Kunz, RUAG Space, Switzerland;
Rapporteur(s): Pierre Rochus, CSL (Centre Spatial de Liège), Belgium; Thomas Sinn, HPS GmbH, United Kingdom;

IAC-19.C2.2.1
COMPRESSIVE RESPONSE AND FAILURE OF A MICROMECHANICAL MODEL FOR CONFINED UNIDIRECTIONAL FIBER REINFORCED COMPOSITE
Antonio Settanni, Alma Mater Studiorum - University of Bologna, Italy

IAC-19.C2.2.2
5.0 METER TRUNCATED SOLID SHELL REFLECTOR : ARIANEGROUP ALTERNATIVE TO EXPENSIVE DEPLOYABLE MESH REFLECTORS
Hervé DUVAL, ArianeGroup, France

IAC-19.C2.2.3
EFFICIENT ANALYSIS OF GEOMETRICALLY NONLINEAR DEPLOYABLE THIN SHELL STRUCTURES USING CARRERA UNIFIED FORMULATION
Armanj Hasanyan, California Institute of Technology, United States

IAC-19.C2.2.4
DESIGN ANALYSIS OF CABLE-ACTUATED CYLINDRICAL TENSEGRITY BOOMS
Kaila Roffman, The Pennsylvania State University, United States

IAC-19.C2.2.5
A TWO-ARM FLEXIBLE SPACE MANIPULATOR SYSTEM FOR POST-GRASPING MANIPULATION OPERATIONS OF A PASSIVE TARGET OBJECT
Angelo Stolfi, Sapienza University of Rome, Italy

IAC-19.C2.2.6
DESIGN, ANALYSIS AND TESTING OF A NOVEL DEPLOYABLE TELESCOPE FOR EARTH OBSERVATION USING SMALL SATELLITES
Jason Shore, Surrey Space Centre - University of Surrey, United Kingdom

IAC-19.C2.2.7
EVALUATION OF THE EFFECT OF THE COMPRESSION STIFFNESS AND THE BENDING STIFFNESS ON THE DEPLOYMENT OF A MEMBRANE-LIKE SPACECRAFT WITH THE MULTI-PARTICLE METHOD
Yuya Miyamoto, Department of Engineering ,The University of Tokyo, Japan

IAC-19.C2.2.8
EXPERIMENTAL VERIFICATION OF TWO-DIMENSIONAL SELF-DEPLOYABLE SPACE STRUCTURES WITH CONVEX-PANEL
Sho Tamura, Tokyo Institute of Technology, Japan

IAC-19.C2.2.9
SPACE DEMONSTRATION OF OCCULTER USING SELF-DEPLOYABLE MEMBRANE TRUSS
Shoichi Shitara, Nihon University, Japan

IAC-19.C2.2.10
DEVELOPMENT AND TESTING OF AN ANTENNA DEPLOYMENT SYSTEM FOR NANOSATELLITE APPLICATIONS
Chintan Malde, Birla Institute of Technology and Science(BITS), India

IAC-19.C2.2.11
TRITRUSS: A NEW AND NOVEL STRUCTURAL CONCEPT ENABLING MODULAR SPACE TELESCOPES AND SPACE PLATFORMS
Bill Doggett, NASA LaRC, United States

IAC-19.C2.2.12
AN ULTRA-COMPACT HELICAL ANTENNA FOR SMALL SATELLITES
Geoffrey Knott, Surrey Space Centre - University of Surrey, United Kingdom

C2.3. Space Structures - Dynamics and Microdynamics

October 22 2019, 14:45 — 152B

Co-Chair(s): Ijar Da Fonseca, ITA-DCTA, Brazil; Harijono Djojodihardjo, Indonesia;

Rapporteur(s): Antonio Del Vecchio, CIRA Italian Aerospace Research Centre, Italy;

IAC-19.C2.3.1
MODAL SURVEY ON A FUSED DEPOSITION MODELLING CUBESAT PRIMARY STRUCTURE BY EXPERIMENTAL AND NUMERICAL MODAL ANALYSIS
Davide Pederbelli, Politecnico di Torino, Italy

IAC-19.C2.3.2
BASELINE AEROELASTIC AND PERFORMANCE ANALYSIS OF PIEZO-AEROELASTIC SPACE-STRUCTURE FOR ENERGY HARVESTER
Harijono Djojodihardjo, Indonesia

IAC-19.C2.3.3
MICROVIBRATION ENGINEERING – A KEY TO HIGH-PERFORMANCE SPACE MISSIONS
Torben Runte, OHB System AG-Bremen, Germany

IAC-19.C2.3.4
REFINED MODELS FOR THE LIMIT-CYCLE OSCILLATIONS PREDICTION OF VAT COMPOSITE PANELS IN SUPERSONIC FLOW
Enrico Zappino, Politecnico di Torino, Italy

IAC-19.C2.3.5
DYNAMIC ANALYSIS OF A NOVEL HEXAPOD PLATFORM WITH EMBEDDED ELECTROMAGNETIC SHUNT DAMPERS
Alessandro Stabile, University of Surrey, United Kingdom

IAC-19.C2.3.6
DISTRIBUTED NETWORK OF SMART ACTUATORS/SENSORS FOR ACTIVE MICRO-VIBRATION CONTROL IN LARGE SPACE ANTENNA STRUCTURES
Federica Angeletti, Sapienza University of Rome, Italy

IAC-19.C2.3.7 (withdrawn)
MICROVIBRATION IMPACTS ON POINTING ACCURACY OF REMOTE SENSING SATELLITES
Ijar Da Fonseca, ITA-DCTA, Brazil

IAC-19.C2.3.8
INVESTIGATION OF THE IMPACT CONDITIONS OF A MECHANICAL SHOCK TEST FACILITY
Christopher Zeis, RWTH Aachen University, Germany

IAC-19.C2.3.9
NONLINEAR SYSTEM IDENTIFICATION OF EXTENSIBLE TRUSS WITH MECHANICAL BACKLASHES
Tomoki Ota, Meijo University, Japan

IAC-19.C2.3.10
REPLACEMENT OF AN AIRCRAFT'S 'OLEO-PNEUMATIC HYDRAULIC SYSTEM' WITH AN 'ELECTROMAGNETIC SHOCK ABSORBING SYSTEM', AN ALTERNATIVE SOLUTION.
Aditya Vedanthu, R.V.College of Engineering, India

IAC-19.C2.3.11
GROUND-BASED HIGH-DOF AI AND ROBOTICS DEMONSTRATOR FOR IN-ORBITS SPACE OPTICAL TELESCOPE ASSEMBLY
Zhou Hao, Surrey Space Centre, University of Surrey, United Kingdom

IAC-19.C2.3.12 (non-confirmed)
VIBRATION ISOLATION FOR SOLAR POWER SATELLITE VIA QUASI-ZERO STIFFNESS SYSTEM
Ruinan Mu, Dalian University of Technology, China

C2.4. Advanced Materials and Structures for High Temperature Applications

October 23 2019, 09:45 — 152B

Co-Chair(s): Marc Lacoste, ArianeGroup, France; David E. Glass, National Aeronautics and Space Administration (NASA), United States;
Rapporteur(s): Zijun Hu, China Academy of Launch Vehicle Technology (CALT), China;

IAC-19.C2.4.1
KEYNOTE: PAOLO SANTINI'S MEMORIAL LECTURE: ABLATORS FROM APOLLO TO FUTURE MISSIONS TO MOON, MARS, AND BEYOND
Ethiraj Venkatapathy, NASA Ames Research Center, United States

IAC-19.C2.4.2
DESIGNING BUILDING AND TESTING OF A THERMAL PROTECTION SYSTEM FOR A SPACECRAFT WHICH CANNOT BE QUALIFIED USING THE STANDARD METHODOLOGY
Edward Schaefer, JHU Applied Physics Laboratory, United States

IAC-19.C2.4.3
PARKER SOLAR PROBE STRUCTURAL-THERMAL ANALYSIS CHALLENGES
Shelly Conkey, JHU Applied Physics Laboratory, United States

IAC-19.C2.4.4
EFFECT OF SIC CONCENTRATION ON AERO-THERMO-DYNAMIC BEHAVIOR OF ZRB2-BASED CERAMICS IN HYPERSONIC ENVIRONMENT
Stefano Mungiguerra, Università degli Studi di Napoli "Federico II", Italy

IAC-19.C2.4.5
DESIGN AND EXPERIMENTAL ANALYSIS OF A THREE-SEGMENT SANDWICH STRUCTURE NOSE CONE FOR HYPERSONIC VEHICLE WITH A COMPARE STUDY OF NUMERICAL SIMULATION EXPERIMENTAL METHOD
XIANG ZHANG, China Academy of Launch Vehicle Technology(CALT), China

IAC-19.C2.4.6
DESIGN AND EXPERIMENTAL VERIFICATION RESEARCH OF A CONVENIENT HIGH TEMPERATURE RESISTANCE SELF-LUBRICATING CMC HINGE FOR CONTROL SURFACE OF HYPERSONIC VEHICLE
XIANG ZHANG, China Academy of Launch Vehicle Technology(CALT), China

IAC-19.C2.4.7
STRUCTURAL DESIGN AND ANALYSIS OF AN AEROSHELL FOR A HUMAN CREW RE-ENTRY VEHICLE
Rohan Chandra, University of Petroleum and Energy Studies, India

IAC-19.C2.4.8
PROTECTIVE HEAT RESISTANT COATING FOR INCONEL 718 ADDITIVELY MANUFACTURED PARTS
Elena Karasik, Firefly Aerospace Inc., Ukraine

IAC-19.C2.4.9
EXTREME-TEMPERATURE CARBON- AND CERAMIC-MATRIX COMPOSITE NOZZLE EXTENSIONS FOR LIQUID ROCKET ENGINES
Peter Valentine, National Aeronautics and Space Administration (NASA), United States

IAC-19.C2.4.10
C/C-SIC CERAMIC MATRIX COMPOSITE ORBITAL THRUSTER DEVELOPMENT FOR HPGP OPERATION
Ilja Mueller, German Aerospace Center (DLR), Germany

IAC-19.C2.4.11
METHOD OF HEAT-PROOF NICKEL ALLOYS MECHANICAL PROPERTIES IMPROVEMENT FOR ROCKET ENGINES
Maryna Hrekova, Yuzhnoye State Design Office, Ukraine

IAC-19.C2.4.12
AN ACTIVE AND PASSIVE COMBINED THERMAL PROTECTION TECHNOLOGY FOR FLOW DISTRIBUTION IN PARALLEL CHANNELS
Ai Bang cheng, China

C2.5. Advancements in Materials Applications and Rapid Prototyping

October 23 2019, 14:45 — 152B

Co-Chair(s): Giuliano Marino, CIRA Italian Aerospace Research Centre, Italy; Behnam Ashrafi, National Research Council, Canada;
Rapporteur(s): James Tucker, Southern Research Institute, United States;

IAC-19.C2.5.1
AN ADDITIVE MANUFACTURING REDESIGN OF A BOX EQUIPMENT WITHIN A LOGISTIC 4.0 FRAMEWORK
Valerio Cardini, Sapienza University of Rome, Italy

IAC-19.C2.5.2
AN OVERVIEW OF THE APPLICATION OF 3D PRINTED SPACECRAFT STRUCTURES WITHIN THE REDSHIFT PROJECT
Scott Walker, University of Southampton, United Kingdom

IAC-19.C2.5.3
DESIGN OF ADDITIVELY MANUFACTURED LIGHTWEIGHT STRUCTURAL COMPONENTS USING TOPOLOGY OPTIMIZATION
Julia Carroll, The John Hopkins University, United States

IAC-19.C2.5.4
DESIGNING AN ORBITAL FACTORY WITH THE INNOVATION OF 3D PRINTER CUBESAT
SANDYA RAO, India

IAC-19.C2.5.5
IN-SITU OBSERVATION OF METAL POWDER MELTING BEHAVIOR USING X-RAY AND THERMAL IMAGING
Yuki Wakai, Waseda University, Japan

IAC-19.C2.5.6
PEEK/NDFEB 3D PRINTED MAGNETIC MATERIALS
Lucia Pigliaru, ESA - European Space Agency, The Netherlands

IAC-19.C2.5.7
TOPOLOGY OPTIMIZATION OF A STAR TRACKER CAMERA BRACKET
Simon Huembert, German Aerospace Center (DLR), Germany

IAC-19.C2.5.8
THERMAL REGULATION USING POROUS 3D PRINTED STRUCTURE OF SMALL SATELLITE
Nikolay Mullin, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.C2.5.9
THE PERMIAM™ ADDITIVE MANUFACTURING PROCESS FOR OPEN POROSITY IN FULLY DENSE MATERIALS
Matthew Kuhns, Masten Space Systems, United States

IAC-19.C2.5.10
IN-SITU CONSTRUCTION ON MARS : 3D PRINTING AND MICROWAVE SINTERING OF MARS SOIL SIMULANT (JMSS-1)
Avishek Ghosh, Loughborough University, United Kingdom

IAC-19.C2.5.11
USING DEMONSTRATOR HARDWARE TO DEVELOP A FUTURE QUALIFICATION LOGIC FOR ADDITIVE MANUFACTURING PARTS
Christo Dordlofva, Luleå University of Technology, Sweden

IAC-19.C2.5.12
DESIGN AND REALIZATION OF AN ADDITIVE MANUFACTURED MULTIFUNCTIONAL SPACECRAFT STRUCTURE THROUGH A SYSTEMS AND CONCURRENT ENGINEERING APPROACH
Luciano Pollice, Sapienza University of Rome, Italy

C2.6. Space Environmental Effects and Spacecraft Protection

October 24 2019, 09:45 — 152B

Co-Chair(s): Giuliano Marino, CIRA Italian Aerospace Research Centre, Italy; Anatolii Lohvynenko, Yuzhnoye State Design Office, Ukraine;
Rapporteur(s): Kyeum-rae Cho, Pusan National University, Korea, Republic of;

IAC-19.C2.6.1
KEYNOTE: DISCOVERER - MAKING COMMERCIAL SATELLITE OPERATIONS IN VERY LOW EARTH ORBITS A REALITY
Peter C.E Roberts, The University of Manchester, United Kingdom

IAC-19.C2.6.2
ELECTRODYNAMIC DUST SHIELD TESTING ON THE MATERIALS ON INTERNATIONAL SPACE STATION EXPERIMENT 11
Michael Johansen, NASA, United States

IAC-19.C2.6.3
ASSESSING THE EFFECTS OF RADIATION ON GAN SEMICONDUCTORS FOR COTS SPACE APPLICATIONS
Mariah Schwartz, The Ohio State University College of Engineering, United States

IAC-19.C2.6.4
DEVELOPMENT OF A DEGRADATION MODEL OF EPOXY ADHESIVE DUE TO RADIATION IN SPACE ENVIRONMENT
Jannik Zimmermann, RWTH Aachen University, Germany

IAC-19.C2.6.5
DESIGN AND DEVELOPMENT OF FIBER OPTIC BASED FORCE BALANCE FOR SUPERSONIC WIND TUNNEL
Nikhil Dakoju, India

IAC-19.C2.6.6
SPECTROSCOPIC EMISSION STUDY OF METEORITE ABLATION DURING EARTH ENTRY EXPERIMENTAL SIMULATION PERFORMED IN PLASMA WIND TUNNEL
Antonio Del Vecchio, CIRA Italian Aerospace Research Centre, Italy

IAC-19.C2.6.7
RADIATION MONITORING IN LOW EARTH ORBIT USING PLANET SATELLITES CONSTELLATION
Arthur Descamps, Planet Labs Inc., United States

IAC-19.C2.6.8
DEVELOP AN ULTRA-LOW POWER MEMRISTOR-BASED DETECTOR FOR RADIATION SENSING AND DOSIMETRY ON BOARD SATELLITES
Hamda AlShehhi, UAE Space Agency, United Arab Emirates

IAC-19.C2.6.9
SPACE DEBRIS DAMAGING OF C/C-BASED SPACECRAFT STRUCTURES: THERMO-MECHANICAL ANALYSIS OF IMPACT ENERGY EFFECT IN GROUND SIMULATION BY RAILGUN BALLISTIC TEST
Andrea Delfini, Sapienza University of Rome, Italy

IAC-19.C2.6.10
SPACECRAFT PROTECTION AGAINST DEBRIS AND RADIATIONS
Hema Punni, University of Petroleum and Energy Studies, India

IAC-19.C2.6.11
DEVELOPMENT OF A NANOSAT RADIATION ENVIRONMENT MONITOR (NANOREM) BASED ON COTS COMPONENTS
Konark Goel, Delft University of Technology (TU Delft), The Netherlands

C2.7. Space Vehicles – Mechanical/Robotic/ Thermal/Fluidic Systems

October 24 2019, 14:45 — 152B

Co-Chair(s): Oleg Alifanov, Moscow Aviation Institute, Russian Federation; Brij Agrawal, Naval Postgraduate School, United States;
Rapporteur(s): Guoliang Mao, Beijing Institute of Aerodynamics, China;

IAC-19.C2.7.1
BOUNDARY LAYER STABILITY AND LAMINAR-TURBULENT TRANSITION ANALYSIS WITH THERMOCHEMICAL NONEQUILIBRIUM APPLIED TO MARTIAN ATMOSPHERIC ENTRY
Heather Kline, National Institute of Aerospace, United States

IAC-19.C2.7.2
INPPS FLAGSHIP WITH IBOSS BUILDING BLOCKS
Frank Jansen, DLR (German Aerospace Center), Germany

IAC-19.C2.7.3
EVALUATING THE FEASIBILITY OF SMART RADIATOR DEVICE (SRD) THROUGH SIMULATED SMALL SATELLITE MISSIONS
Aimee Carvey, University of Manitoba, Canada

IAC-19.C2.7.4
WHY DID NASA LIMIT THE USE OF MAGNESIUM? FLAMMABILITY AND CORROSION TESTING OF LIGHTWEIGHT MAGNESIUM ALLOYS FOR SPACE FLIGHT HARDWARE APPLICATIONS
M Clara Wright, National Aeronautics and Space Administration (NASA), United States

IAC-19.C2.7.5
PROPOSITION OF APPLICATION OF GENERATIVE DESIGN ALGORITHMS IN THERMAL APPARATUS DESIGN AND CALCULATIONS
Jakub Michalka, Poland

IAC-19.C2.7.6
DIAGNOSTICS OF DEFECTS OF THERMAL PROTECTIONS INFLATABLE RE-ENTRY VEHICLES
Aleksey V. Nenarokomov, Moscow Aviation Institute, Russian Federation

IAC-19.C2.7.7
DYNAMIC STALL CHARACTERISTICS OF LOW REYNOLDS NUMBER AIRFOIL IN MARTIAN AND TITAN'S ATMOSPHERE
Rajesh Yadav, University of Petroleum and Energy Studies, India

IAC-19.C2.7.8
THERMAL DESIGN STRATEGY UTILIZING TRANSFORMABLE STRUCTURE OF SPACECRAFT
Ryota Ikeda, Aoyama Gakuin University, Japan

IAC-19.C2.7.9
SIMULATION OF RAREFIED HYPERSONIC FLOWS BY USING THE DIRECT SIMULATION MONTE CARLO METHOD
Haiwei Yang, Harbin Engineering University, China

IAC-19.C2.7.10
QUALIFICATION OF AN INFRARED ARRAY BASED ON NICR STRIPS FOR CBERS 4A SATELLITE'S SPACE SIMULATION TEST
George Fernandes, National Institute for Space Research - INPE, Brazil

IAC-19.C2.7.11
RUAG'S DEVELOPMENT OF A MODULAR LOW-SHOCK JETTISON SYSTEM
Alberto Sanchez Cebrian, RUAG Space, Switzerland

IAC-19.C2.7.12
SUITABILITY OF MANUFACTURING PROCESSES FOR IN-SPACE MANUFACTURING OF SPACECRAFT COMPONENTS
Matthew Moraguez, Massachusetts Institute of Technology (MIT), United States

C2.8. Specialised Technologies, Including Nanotechnology

October 25 2019, 09:45 — 152B

Co-Chair(s): Mario Marchetti, Sapienza University of Rome, Italy; Pierre Rochus, CSL (Centre Spatial de Liège), Belgium;
Rapporteur(s): Bangcheng Ai, China Aerospace Science and Industry Corporation, China;

IAC-19.C2.8.1
MECHANICAL PROPERTIES OF POLYMER-DERIVED CERAMICS MODIFIED BY ACTIVE AND PASSIVE NANO-PARTICLES
Hamidreza Yazdani Sarvestani, National Research Council, Canada

IAC-19.C2.8.2
THERMAL ANALYSIS OF ADVANCED CERAMIC COATING ON CARBON/CARBON SUBSTRATES FOR AEROSPACE RE-ENTRY RE-USABLE STRUCTURES
Andrea Delfini, Sapienza University of Rome, Italy

IAC-19.C2.8.3 (withdrawn)
TECHNIQUES FOR REDUCING THE TRANSITION TEMPERATURE OF FURNACE OXIDIZED VO2 FOR SPACECRAFT THERMAL CONTROL
Sydney Taylor, Arizona State University, United States

IAC-19.C2.8.4
THERMAL DESIGN EVALUATION OF LOOP HEAT PIPE FOR SMALL SATELLITE APPLICATIONS USING GRAPHENE NANO-PARTICLES
Abdulla Alshehhi, UAE Space Agency, United Arab Emirates

IAC-19.C2.8.5
MOLECULAR DYNAMICS OF NANOPARTICLE TRANSPORT MECHANISM IN CELL MEMBRANES
Michael Kio, University of Maryland - College Park, United States

IAC-19.C2.8.6
METAHEURISTICS IN THE AUTOMATED DESIGN OF CMOS-MEMS SENSORS FOR PLANETARY EXPLORATION.
Benito Granados-Rojas, CINVESTAV, Mexico

IAC-19.C2.8.7
GRAPHENE AS A STIMULUS FOR NANOSTRUCTURAL CHANGES IN SILICON OXYCARBIDE CERAMICS AND ITS INFLUENCE ON THERMOELECTRIC PERFORMANCE
Elizabeth Barrios, University of Central Florida (UCF), United States

IAC-19.C2.8.8
SPACE-GRADE POLYETHYLENE/CARBON NANOCOMPOSITES FABRICATED BY 3D-PRINTING
Federica Zaccardi, Sapienza University of Rome, Italy

IAC-19.C2.8.9
DESIGN AND RESEARCH OF THERMAL PROTECTION CONSIDERING THE CARBON FOAM MORPHOLOGY
Margarita Salosina, Moscow Aviation Institute (National Research University), Russian Federation

IAC-19.C2.8.10
FEASIBILITY AND SPONTANEITY OF GEOPOLYMERS FOR POTENTIAL AEROSPACE APPLICATIONS
Sambit Supriya Dash, SRM University, Chennai, India

IAC-19.C2.8.11
TOPOLOGY OPTIMIZATION FOR 3D PRINTING WITH SELECTIVE PLACEMENT OF CNT YARN REINFORCEMENT
Saranthip Koh, United States

IAC-19.C2.8.12
HIGH STRENGTH FIBER REINFORCED SYNTACTIC FOAM COMPOSITES AS INTERPLANETARY THERMAL PROBE MATERIAL
Satheesh Chandran, Vikram Sarabhai Space Centre (VSSC), India

C2.9. Smart Materials and Adaptive Structures

October 25 2019, 13:30 — 152B

Co-Chair(s): Pavel Trivailo, RMIT University (Royal Melbourne Institute of Technology), Australia; Hiroshi Furuya, Tokyo Institute of Technology, Japan;
Rapporteur(s): Paolo Gaudenzi, Sapienza University of Rome, Italy; Élcio Jeronimo de Oliveira, Luleå University of Technology, Sweden;

IAC-19.C2.9.1
FUNDAMENTAL CHARACTERISTICS OF SELF-DEPLOYABLE CONVEX SHELL USING SHAPE MEMORY POLYMER
Atsuhiko Senba, Meijo University, Japan

IAC-19.C2.9.2
TUNABLE POSS-POSS NANOSTRUCTURED MECHANICAL METAMATERIAL FOR ENHANCED DURABILITY OF COMPOSITES
Blaze Heckert, Oklahoma State University (OSU), United States

IAC-19.C2.9.3 (withdrawn)
STUDY AND DEVELOPMENT OF SATELLITE SOLAR PANELS DEPLOYMENT SYSTEM
André Gonçalves, Universidade do Minho, Portugal

IAC-19.C2.9.4 (withdrawn)
USE OF FIBER-OPTIC SENSORS FOR LONG-TERM HEALTH MONITORING OF AEROSPACE STRUCTURES
Shengnan Geng, China

IAC-19.C2.9.5
NOVEL LOCKING DEVICE FOR MAGNETIC BEARING FLYWHEEL ACTUATED BY BIAS SMA WIRE ACTUATOR COMBINED WITH LINKAGE MECHANISM.
Xiaoyong Zhang, Beihang University (BUAA), China

IAC-19.C2.9.6
LABORATORY DEMONSTRATION OF COHERENT COMBINATION OF SPARSE APERTURE IMAGES
Brij Agrawal, Naval Postgraduate School, United States

IAC-19.C2.9.7
RESPONSIVE SPACE STRUCTURES: MODULAR, RE-CONFIGURABLE TILES FOR MICROGRAVITY SELF-ASSEMBLY
Ariel Ekblaw, Massachusetts Institute of Technology (MIT), United States

IAC-19.C2.9.8
NUMERICAL AND EXPERIMENTAL INVESTIGATION OF PIEZOELECTRIC ENERGY HARVESTER BASED ON FLAG-FLUTTER
Marco Eugeni, Sapienza University of Rome, Italy

IAC-19.C2.9.9
NEW APPROACH TO SEMI-ACTIVE VIBRATION CONTROL BASED ON DISTURBANCE PREDICTION
Kanjuro Makihara, Tohoku University, Japan

IAC-19.C2.9.10
PANEL-EMBEDDED REACTION WHEEL FOR SMALL SPACECRAFT
Rishabh Sahani, University of Manitoba, Canada

C2.IP. Interactive Presentations - IAF MATERIALS AND STRUCTURES SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Paolo Gasbarri, Sapienza University of Rome, Italy; Andreas Rittweger, DLR (German Aerospace Center), Germany;

IAC-19.C2.IP.1
SURFACE FUNCTIONALIZATION OF GRAPHENE PRIOR TO NANOPARTICLES TETHERING FOR TRI-FUNCTIONALITY IN BOTH ACIDIC AND ALKALINE MEDIA
Simranjit Grewal, The National AeroSpace Training And Research Center (THE NASTAR CENTER), United States

IAC-19.C2.IP.2
ON-ORBIT ADDITIVE MANUFACTURING OF PARABOLIC REFLECTORS VIA SOLAR PHOTOPOLYMERIZATION
Avishai Weiss, Mitsubishi Electric Research Laboratories (MERL), United States

IAC-19.C2.IP.3
GROUND SIMULATION SYSTEM FOR ACTIVE VIBRATION CONTROL BASED ON THE BIO-INSPIRED X-SHAPE STRUCTURE FOR FREE-FLOATING SPACECRAFT
Xin Wang, National Key Laboratory of Aerospace Flight Dynamics, Northwestern Polytechnical University, China

IAC-19.C2.IP.4
WIND TUNNEL DATA ANALYZING BY JAVAD SOFTWARE
Ali Malekzadeh, Sharif University of Technology, Iran

IAC-19.C2.IP.5
OPTIMIZING TOPOLOGY AND STACKING SEQUENCE IN LAMINATED COMPOSITE STRUCTURES
Chuan Luo, The John Hopkins University, United States

IAC-19.C2.IP.6
BASE ANALOG TO MARS ICE AS A PARAMETRIC INSULATION FACADE
Luciana Tenorio, Tokyo University, Graduate school, Japan

IAC-19.C2.IP.7
ENVIRONMENTAL ANALYSIS OF NANOROVERS IN A SWARM FOR LUNAR'S SCIENTIFIC MISSIONS
Jesús Manuel Muñoz Tejeda, Universidad Carlos III de Madrid, Spain

IAC-19.C2.IP.8
ANALYSIS OF INFLUENCES OF EXTERNAL COMPONENTS DURING VIBRATION TESTING OF CUBESATS
Andreas Johann Hörmer, Graz University of Technology (TU Graz), Austria

IAC-19.C2.IP.9
VIBRATION TEST FOR 7 TON-CLASS LIQUID PROPELLANT ROCKET ENGINE
Jinhyuk Kim, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.C2.IP.10
THE BENEFICIATION OF LUNAR REGOLITH USING ELECTROSTATIC SEPARATION FOR SPACE RESOURCE UTILISATION
Joshua Rasera, Imperial College London, United Kingdom

IAC-19.C2.IP.11
HIGH TEMPERATURE THERMAL MARGIN
Elisabeth Abel, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.C2.IP.12
INTEGRATION OF A REACTION WHEEL SYSTEM INTO A SOUNDING ROCKET TO INCREASE STABILITY AND PERFORMANCE
Harry Byers, The Ohio State University College of Engineering, United States

IAC-19.C2.IP.13 (withdrawn)
THERMAL AND STRUCTURAL OPTIMIZATION OF SMALL SATELLITES USING COMPOSITE MATERIALS
Mariana Moreira, Instituto Superior Técnico, Portugal

IAC-19.C2.IP.14 (non-confirmed)
ANALYSIS OF AN ADDITIVE MANUFACTURED LIQUID ROCKET ENGINE
Eric Thomas, Portland State University, United States

IAC-19.C2.IP.15
SENSOR COATINGS FOR HIGH-TEMPERATURE MEASUREMENTS IN SPACE APPLICATIONS
Marta Ferran Marques, Sensor Coating Systems Limited, United Kingdom

IAC-19.C2.IP.16
DEVELOPMENT OF ARTIFICIAL EXTERIOR SKIN FOR REMOTE ROBOTICS
Kellen Devries, University of Prince Edward Island, Canada

IAC-19.C2.IP.17
OPTIMAL DESIGN OF THE BACK TRUSS STRUCTURE FOR MINIMIZING THE DEFORMATION OF REFLECTOR UNDER GRAVITY
Tatsuki Kawai, Meijo University, Japan

IAC-19.C2.IP.18
THE INFLUENCE OF UNION DESIGN IN THRUST MEASUREMENT OF A TO D CATEGORY ROCKET MOTOR IN AN AMATEUR TEST BENCH. A CASE STUDY
Miguel Manrique, LEEM - Laboratory for Space and Microgravity Research, Spain

IAC-19.C2.IP.19
MULTI-OBJECTIVE OPTIMIZATION OF A SMALL LAUNCH VEHICLE AERODYNAMIC PAYLOAD FAIRING FOR MINIMUM DRAG AND MASS.
Sadben Khan, C6 Launch Systems, Canada

IAC-19.C2.IP.20 (withdrawn)
IMPACT PROPERTIES OF MICRO-CHANNELED EPOXY FOAMS AND FIBER REINFORCED MICRO-CHANNELED COMPOSITES
Eric Schmid, South Dakota School of Mines and Technology, United States

IAC-19.C2.IP.21
PW-SAT2 DEORBIT SAIL TEST CAMPAIGN AT DROP TOWER AND VERIFICATION ON ORBIT
Inna Uwarowa, Students Space Association, Warsaw University of Technology, Poland

C3. IAF SPACE POWER SYMPOSIUM

Coordinator(s): Ming Li, China Academy of Space Technology (CAST), China; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

C3.1. Solar Power Satellite

October 22 2019, 09:45 — 147A

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Ming Li, China Academy of Space Technology (CAST), China;
Rapporteur(s): Leopold Summerer, European Space Agency (ESA), The Netherlands; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

IAC-19.C3.1.1
A FEASIBILITY ASSESSMENT FOR PROVIDING ENERGY TO REMOTE INSTALLATIONS VIA SPACE SOLAR
Paul Jaffe, Naval Research Laboratory, United States

IAC-19.C3.1.2
CONCEPTUAL DESIGN OF KOREAN SPACE SOLAR POWER SATELLITE
Joon Min Choi, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.C3.1.3
HIGH POWER ELECTRIC POWER GENERATION, TRANSMISSION AND MANAGEMENT FOR A PILOT MW SPS
Xinbin Hou, CAST, China

IAC-19.C3.1.4
POWERING SPACE: ADVANCES IN CONCEPTS FOR & APPLICATIONS OF SOLAR POWER SATELLITES
John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-19.C3.1.5
SPACE MIRROR ORBIT FOR MUNICIPAL STREET LIGHTING
Lewis Fraas, United States

IAC-19.C3.1.6
MOONBEAM POWER SCENARIO
Mark Henley, Moon Village Association (MVA), United States

IAC-19.C3.1.7
USE OF THE MOON TO FABRICATE SOLAR CELLS FOR SPACE SOLAR POWER SATELLITES
Alex Ignatiev, United States

IAC-19.C3.1.8 (withdrawn)
THREE-PHASES MODULAR CONSTRUCTION DEMONSTRATION SCHEME FOR MW-CLASS MR-SPS
ZhengAi Cheng, Qian Xuesen Laboratory of Space Technology, China

IAC-19.C3.1.9
LIGHTWEIGHT SOLAR PANELS: SPACE BASED SOLAR POWER
Amanda Michelle Simran Sathiaraj, Illinois Institute of Technology, United States

IAC-19.C3.1.10
MICROWAVE-BEAMED SPACE-BASED SOLAR POWER FROM CUBESATS TO POWER HOUSEHOLDS IN REMOTE AREAS AND IN CITIES WITH DENSE CLOUD COVER
Mina Takla, CosmoX, Russian Federation

IAC-19.C3.1.11
SPACE SOLAR POWER - STUDENT COMPETITION FINALIST
John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-19.C3.1.12
SPACE SOLAR POWER - STUDENT COMPETITION FINALIST
John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

C3.2. Wireless Power Transmission Technologies and Application

October 22 2019, 14:45 — 147A

Co-Chair(s): Nobuyuki Kaya, Kobe University, Japan; Ming Li, China Academy of Space Technology (CAST), China;
Rapporteur(s): Massimiliano Vasile, University of Strathclyde, United Kingdom; Haroon B. Oqab, Space Canada Corporation, Canada;

IAC-19.C3.2.1
CURRENT STATUS OF THE SSPS DEVELOPMENT AND THE RESULT OF GROUND TO AIR MICROWAVE POWER TRANSMISSION EXPERIMENT.
Shoichiro Mihara, Japan Space Systems, Japan

IAC-19.C3.2.2
CASSIOPEIA: BEAMED POWER THROUGH THE LONG LUNAR NIGHT
Ian Cash, International Electric Company (IECL), United Kingdom

IAC-19.C3.2.3
CHALLENGES OF SPACE POWER AND ANCILLARY SERVICES BEAMING: KEY TO OPENING THE CISLUNAR MARKETPLACE
Gary Barnhard, XISP-Inc, United States

IAC-19.C3.2.4
A SOLAR POWER SATELLITE SENDING A 1 MW INFRARED BEAM FROM GEO TO CONCENTRATING SOLAR POWER MODULES ON THE GROUND
Lewis Fraas, United States

IAC-19.C3.2.5
SYSTEM DESIGN OF WIRELESS POWER TRANSMISSION FOR ELECTRIC POWERED UAV
Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

IAC-19.C3.2.6
USING SPACE ELEVATOR TO BRING SPACE-BASED POWER PLANTS' ENERGY DOWN TO EARTH
Omid Shekoofa, Satellite Research Institute, Iranian Space Research Center, Iran

IAC-19.C3.2.7
DESIGN AND DEVELOPMENT OF A DYSON SWARM TO ENHANCE THE ENERGY RECEPTION FROM PARENT STAR USING SOLAR SAILS.
Shashank Pathak, Technische Universität Berlin, Germany

IAC-19.C3.2.8
CENTRIFUGAL LASER SPACE SOLAR POWER PLANTS: DESIGN PROSPECTS AND IMPLEMENTATION FEATURES
John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-19.C3.2.9
ARCHITECTURAL DESIGN CONSIDERATIONS FOR A ROBOTIC POWER INFRASTRUCTURE ON THE MOON
Raul Polit Casillas, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.C3.2.10 (withdrawn)
WIRELESS ELECTRIFICATION IN SATELLITE SUB-SYSTEMS
Meshack Ndiritu, African Union Commission and Space Generation Advisory Council (SGAC), Ethiopia

IAC-19.C3.2.11 (non-confirmed)
WIRELESS POWER SYSTEM APPROACHES FOR PLANETARY ROVER EXPLORATION
Herbert Murray, United States

IAC-19.C3.2.12
WIRELESS POWER TRANSFER TECHNOLOGY USING SOLAR POWER HARNESSING SATELLITE AND RECTENNA.
Ankitha Selvam, R V College of Engineering, Bengaluru, India

C3.3. Advanced Space Power Technologies

October 24 2019, 14:45 — 147A

Co-Chair(s): Matthew Perren, Airbus Defence & Space, United Kingdom; Gary Pearce Bamhard, Xtraordinary Innovative Space Partnerships, Inc., United States;
Rapporteur(s): Lee Mason, National Aeronautics and Space Administration (NASA), Glenn Research Center, United States; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

IAC-19.C3.3.1
SOLAR POWER SYSTEM AND RADIOISOTOPE THERMOELECTRIC GENERATION TECHNOLOGIES AT JUPITER-SATURN-URANUS ENVIRONMENTS: NEW INSIGHTS AND PARADIGMS
Terry Hendricks, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.C3.3.2 (withdrawn)
STAND-ALONE POWER SYSTEM (SAPS) DESIGN FOR A LUNAR HABITAT: THE FLEXHAB CASE STUDY
Andrea Emanuele Maria Casini, ESA - European Space Agency, Germany

IAC-19.C3.3.3
THE ELECTRICAL POWER SYSTEMS DESIGN AND THE PERFORMANCE ANALYSIS FOR THE SECOND KOREAN SAR SATELLITE
Young-Jin Won, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.C3.3.4
REVIEW AND EVALUATION OF ENERGY GENERATION SYSTEMS FOR PLANETARY SETTLEMENTS
Oscar Ojeda, Purdue University, United States

IAC-19.C3.3.5
A SPACE POWER SYSTEM FOR ENERGY HARVESTING FROM AN ELECTRODYNAMIC TETHER
Jose A Carrasco, Embedded Instruments and Systems S.L., Spain

IAC-19.C3.3.6
DESIGN AND ANALYSIS OF SOLAR POWERED LASER SYSTEM FOR POWER GENERATION IN SATELLITES
Pratyay Mazumdar, R V College of Engineering, Bengaluru, India

IAC-19.C3.3.7
MODULAR STANDARDS FOR SPACE POWER SYSTEMS
Brent Gardner, National Aeronautics and Space Administration (NASA)/Glenn Research Center, United States

IAC-19.C3.3.8
DIRECT THERMAL ENERGY CONVERSION VIA TUNED THERMAL EMITTER AND PHOTOVOLTAIC BAND GAP
Charles Swanson, Princeton Satellite Systems, United States

IAC-19.C3.3.9
A RIGOROUS APPROACH TO NUCLEAR REACTOR SAFETY ANALYSES
Roger X. Lenard, LPS, United States

IAC-19.C3.3.10
THEORETICAL CHARACTERIZATION OF THE ORGANIC SOLAR CELL (PC60BM:P3HT) FOR SPACE ENVIRONMENT CONDITIONS
Yair Israel Piña López, Universidad Nacional Autónoma de México, Mexico

IAC-19.C3.3.11
DESIGN OF AN ELECTRIC POWER SYSTEM WITH EMBEDDED BATTERY MANAGEMENT SYSTEMS AND CHARGERS FOR THE ILR-33 AMBER ROCKET AND MICRO LAUNCHER APPLICATIONS
Jakub Rachucki, Institute of Aviation, Poland

IAC-19.C3.3.12
DESIGN AND DEVELOPMENT OF AN AUTONOMOUS ONLINE POWER DISTRIBUTION ARCHITECTURE BASED ON REAL-TIME LOAD TRAFFIC ANALYSIS
Ananth Gargeswari Seshasayee, R V College of Engineering, Bengaluru, India

C3.4. Space Power System for Ambitious Missions

October 25 2019, 09:45 — 147A

Co-Chair(s): Massimiliano Vasile, University of Strathclyde, United Kingdom; Shoichiro Mihara, Japan Space Systems, Japan;
Rapporteur(s): Xinbin Hou, CAST, China; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

IAC-19.C3.4.1
ON-ORBIT FLIGHT TESTING OF THE ROLL-OUT SOLAR ARRAY
Matthew Chamberlain, National Aeronautics and Space Administration (NASA), United States

IAC-19.C3.4.2
FEASIBILITY STUDY OF A LUNAR-BASED CONCENTRATED SOLAR POWER PLANT
Ingo Jahn, University of Queensland, Australia

IAC-19.C3.4.3
A CONTROL FRAMEWORK FOR AUTONOMOUS SMART GRIDS FOR SPACE POWER APPLICATIONS
Jeffrey Csank, National Aeronautics and Space Administration (NASA), United States

IAC-19.C3.4.4
IN-SITU RESOURCED SOLAR POWER GENERATION AND STORAGE FOR A SUSTAINABLE MOON VILLAGE
Alex Ellery, Space Exploration and Engineering Group, Carleton Univeristy, Canada

IAC-19.C3.4.5
A POWER SYSTEM FOR LUNAR HUMAN PRESENCE ENABLED BY SOLAR CELL FABRICATION ON THE MOON
Alex Ignatiev, United States

IAC-19.C3.4.6
LUNAR POWER STATION
Hamed Alhashmi, UAE Space Agency, United Arab Emirates

IAC-19.C3.4.7
MARS HABITAT POWER OPTIMIZATION, RESULTS AND DEVELOPMENT
Ansley Barnard, Esteco North America, Inc., United States

IAC-19.C3.4.8
POWER SYSTEMS FOR VENUS SURFACE MISSIONS
Geoffrey Landis, NASA Glenn Research Center, United States

IAC-19.C3.4.9
DESIGN CONSIDERATIONS FOR THE DEVELOPMENT OF A SURFACE POWER INFRASTRUCTURE TO FACILITATE HUMAN EXPLORATION OF TITAN
Daniel White, Embry-Riddle Astronautical University, United States

IAC-19.C3.4.10
THE SPACE ENVIRONMENTAL ELECTRICAL POWER SUBSYSTEM (SEEPS): ENERGY HARVESTING SUPPORTING MICROSATELLITE EXPLORATION OF THE OUTER SOLAR SYSTEM
Sean Young, Stanford University, United States

IAC-19.C3.4.11
SYSTEM ARCHITECTURE FOR POWER GENERATION, MANAGEMENT AND MAINTENANCE OF A NUCLEAR PLANT ON THE LUNAR SURFACE FOR IN-SITU RESOURCES UTILIZATION
Alessandro Lovagnini, Politecnico di Torino, Italy

IAC-19.C3.4.12
DEVELOPMENT OF STANDARD DEPLOYABLE SOLAR PANEL MODULE FOR CUBESAT APPLICATION
Shankar Bhattarai, Chosun University, Korea, Republic of

C3.5-C4.7. Joint Session on Advanced and Nuclear Power and Propulsion Systems

October 24 2019, 09:45 — 143A

Co-Chair(s): Leopold Summerer, European Space Agency (ESA), The Netherlands;
Rapporteur(s): Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

IAC-19.C3.5-C4.7.1
VERSATILE NUCLEAR THERMAL PROPULSION (NTP)
Michael Houts, NASA, United States

IAC-19.C3.5-C4.7.2
IMPACT MODELLING AND SAFETY TESTS FOR THE ESA RADIOISOTOPE POWER SYSTEMS
Alessandra Barco, University of Leicester, United Kingdom

IAC-19.C3.5-C4.7.3
ANALYSIS OF INTERNATIONAL TREATIES AND POLICIES RELATED TO SPACE NUCLEAR POWER AND PROPULSION
Jericho Locke, IDA Science and Technology Policy Institute, United States

IAC-19.C3.5-C4.7.4
NUCLEAR PROPULSION TECHNOLOGY FOR EXPLORATION AND A SUSTAINABLE PRESENCE ON THE MOON, MARS AND BEYOND
Claude Joyner, Aerojet Rocketdyne, United States

IAC-19.C3.5-C4.7.5
COMPUTATIONAL ANALYSIS OF NUCLEAR THERMAL PROPULSION ROCKET (NTPR) BIMODALITY, FUEL, AND PROSPECTIVE COATING
Valerie Lawdensky, Los Alamos National Laboratory, United States

IAC-19.C3.5-C4.7.6
EVALUATION OF MINIMALLY-INTRUSIVE POWER GENERATION SYSTEM (MIPS) DESIGN ALTERNATIVES FOR NUCLEAR THERMAL PROPULSION
Samantha Rawlins, University of Alabama in Huntsville, United States

IAC-19.C3.5-C4.7.7
THE PYLON: COMPACT LEU COMMERCIAL FISSION POWER THE MOON, MARS, AND SPACE
Christopher Morrison, United States

IAC-19.C3.5-C4.7.8
LIQUID FLUORIDE THORIUM REACTOR - CURRENT RESEARCH AND CAPABILITIES FOR MARS AND MOON HUMAN COLONIES.
Jakub Nalewaj, Wrocław University of Technology, Poland

IAC-19.C3.5-C4.7.9
THE DIPOLE DRIVE A NEW CONCEPT IN PROPELLANTLESS PROPULSION
Robert Zubrin, Pioneer Astronautics, United States

IAC-19.C3.5-C4.7.10
FUSION PROPULSION AND POWER FOR EXTRASOLAR EXPLORATION
Stephanie Thomas, Princeton Satellite Systems, United States

IAC-19.C3.5-C4.7.11
RADIOISOTOPE THERMOELECTRIC GENERATORS (RTGS) AND HEATER UNITS (RHUS) BASED ON AMERICIUM-241 FOR SCIENCE AND EXPLORATION
Richard Ambrosi, University of Leicester, United Kingdom

IAC-19.C3.5-C4.7.12
THE SPACEDRIVE PROJECT – OVERVIEW OF REVOLUTIONARY PROPULSION EFFORTS AT TU DRESDEN
Martin Tajmar, TU Dresden, Germany

C3.IP. Interactive Presentations - IAF SPACE POWER SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Ming Li, China Academy of Space Technology (CAST), China; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

IAC-19.C3.IP.1
DEVELOPMENT OF CUBESAT ELECTRIC POWER SYSTEM SIMULATOR WITH COMPLEX GEOMETRY
Dae Young Lee, Iowa State University, United States

IAC-19.C3.IP.2 (non-confirmed)
CREATION OF A DEMONSTRATION SPACE SOLAR POWER STATION
Gulnaz Yermoldina, LLP "INT-SAT Alatau", Kazakhstan

IAC-19.C3.IP.3 (non-confirmed)
ELSA-CS, A FOUR TIMES DEPLOYABLE SOLAR ARRAY FOR THE CUBESAT STANDARD
Giulio van Ginkel, German Orbital Systems GmbH, Germany

IAC-19.C3.IP.4
STUDY AND DESIGN OF COMPACT ORIGAMI UNFOLDING SOLAR ARRAY STRUCTURE
Kirti Vishwakarma, University of Petroleum and Energy Studies, India

IAC-19.C3.IP.5
DEVELOPMENT OF A MODULAR LI-ION BATTERY FOR LEO SATELLITES
Valerio Giuliani, SAB AEROSPACE SRL, Italy

IAC-19.C3.IP.6
HARDWARE ARCHITECTURE OF ELECTRICAL POWER SYSTEM FOR 3U HYPERSPECTRAL IMAGING CUBESAT
Nihal Singh, Birla Institute of Technology and Science(BITS), India

IAC-19.C3.IP.7
PROTOTYPE SOLAR POWER TOWER/ ADVANCED HELIOSTATS AND BUILD SOPHISTICATED TRANSFORMERS ON MOON SURFACE
SANDYA RAO, India

C4. IAF SPACE PROPULSION SYMPOSIUM

Coordinator(s): Giorgio Saccoccia, European Space Agency (ESA), The Netherlands; Christophe Bonhomme, Centre National d'Etudes Spatiales (CNES), France; Riheng Zheng, China Aerospace Science & Industry Corporation (CASIC), China; Vanessa Vial, Safran Aircraft Engines, France; Elena Toson, T4i, Italy; George Schmidt, NASA Glenn Research Center, United States;

C4.1. Propulsion System (1)

October 21 2019, 15:00 — 143A

Co-Chair(s): Christophe Bonhomme, Centre National d'Etudes Spatiales (CNES), France; Patrick Danous, ArianeGroup, France;
Rapporteur(s): Ozan Kara, Space Generation Advisory Council (SGAC), Turkey; Akira Ogawara, Mitsubishi Heavy Industries, Ltd., Japan;

IAC-19.C4.1.1
KEYNOTE: PROMETHEUS: PRECURSOR OF LOW-COST ROCKET ENGINE
Emmanuel Edeline, ArianeGroup SAS, France

IAC-19.C4.1.2
ASSESSMENT OF MON-25/MMH PROPELLANT SYSTEM FOR DEEP-SPACE ENGINES
Huu Trinh, NASA, United States

IAC-19.C4.1.3
60 YEARS DLR LAMPOLDSHAUSEN – THE EUROPEAN RESEARCH AND TEST SITE FOR CHEMICAL SPACE PROPULSION SYSTEMS
Anja Frank, German Aerospace Center (DLR), Germany

IAC-19.C4.1.4
FIRING TESTS OF LE-9 DEVELOPMENT ENGINE FOR H3 LAUNCH VEHICLE
Takenori Maeda, Mitsubishi Heavy Industries, Ltd., Japan

IAC-19.C4.1.5
DEVELOPMENT STATUS OF BOOSTER STAGE LIQUID ROCKET ENGINE OF KSLV-II PROGRAM
Soon-Young Park, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.C4.1.6
DEVELOPMENT TESTS OF RD815 ENGINE PREBURNER DEMONSTRATOR
Alexandr Prokopchuk, Yuzhnoye State Design Office, Ukraine

IAC-19.C4.1.7
ANOMALY DETECTION OF LIQUID PROPELLANT ROCKET ENGINE USING SYSTEM INVARIANT ANALYSIS TECHNOLOGY
Masaki Sato, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C4.1.8
VINCI UPPER STAGE ENGINE QUALIFICATION FOR ARIANE 6
Erwam Humbert, ArianeGroup, France

IAC-19.C4.1.9
MAIN RESULTS FROM ORION EUROPEAN SERVICE MODULE PROPULSION SUBSYSTEM QUALIFICATION TESTING
Markus Jäger, Airbus Defence & Space, Space Systems, Germany

IAC-19.C4.1.10
WATER PROPULSION - THE ULTIMATE GREEN TECHNOLOGY
Ulrich Gotzig, ArianeGroup, Germany

IAC-19.C4.1.11
NUMERICAL STUDY ON PERFORMANCES OF AN ELECTRIC PUMP-FED CYCLE ROCKET ENGINE
Toshiya Kimura, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C4.1.12
PRELIMINARY STUDY ON EXPANDER CYCLE METHANE ENGINE FOR POST-KSLV 2 PROGRAM
Cheulwoong Kim, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.C4.1.13
QUALIFYING AN ADDITIVELY MANUFACTURED LIQUID ROCKET ENGINE FOR HOT-FIRE READINESS
Nihar Patel, University of Southern California, United States

C4.10. Propulsion Technology (3)

October 25 2019, 13:30 — 143A

Co-Chair(s): Norbert Puettmann, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Riheng Zheng, China Aerospace Science & Industry Corporation (CASIC), China;
Rapporteur(s): Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands; Martin Velander, GKN Aerospace Engine Systems, Sweden;

IAC-19.C4.10.1
A TEST RIG FOR MEASURING ROTORDYNAMIC FORCE COEFFICIENTS OF SEALS, HYDROSTATIC BEARINGS AND IMPELLERS: SUMMARY OF A DECADE OF TESTS
Pascal Jolly, France

IAC-19.C4.10.2
STATUS REPORT PROMETHEUS L-PBF TURBINE PROGRAM
Staffan Brodin, GKN Aerospace Engine Systems, Sweden

IAC-19.C4.10.3
ELECTRIC SAIL PROPULSION FOR DEEP SPACE MISSIONS
Les Johnson, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, United States

IAC-19.C4.10.4
DEVELOPMENT OF A LOW COST COLD GAS REACTION CONTROL SYSTEM
Samuel Gaylin, United States

IAC-19.C4.10.5
DESIGN CONSIDERATIONS FOR RELATIVISTIC LASER SAILS
Brice Cassenti, University of Connecticut, United States

IAC-19.C4.10.6
EVALUATION OF ADDITIVELY MANUFACTURED LIQUID ROCKET ENGINE COOLING CHANNELS
Alex Bishop, The John Hopkins University, United States

IAC-19.C4.10.7
DEVELOPMENT OF LOW-COST HYPERGOLIC PROPULSION SYSTEMS IN IHI AEROSPACE
Shohei Koga, IHI Aerospace Co, Ltd., Japan

IAC-19.C4.10.8
COLD GAS EXPERIMENTS ON LINEAR, THRUST-VECTORED AEROSPIKE NOZZLES THROUGH SECONDARY INJECTION
Jan Sieder-Katzmann, TU Dresden, Germany

IAC-19.C4.10.9
PARAMETRIC STUDY OF COMBUSTION INSTABILITY IN A MULTI-INJECTOR ROCKET COMBUSTOR USING 2D PLANAR DETACHED EDDY SIMULATIONS
Arnau Pons Lorente, Purdue University, United States

IAC-19.C4.10.10
BLACK ENGINE CERAMIC ROCKET PROPULSION
Markus Ortelt, German Aerospace Center (DLR), Germany

IAC-19.C4.10.11
DEVELOPMENT STATUS OF NUMERICAL SIMULATIONS FOR ROCKET ENGINE DESIGN ACTIVITIES - TOWARDS PRECISE PREDICTION OF COMBUSTION INSTABILITIES -
Masaki Adachi, Mitsubishi Heavy Industries, Ltd., Japan

IAC-19.C4.10.12
STATUS REPORT SWAN SANDWICH NOZZLE PROGRAM FOR ARIANE 6
Lise Brox, GKN Aerospace Engine Systems, Sweden

IAC-19.C4.10.13 (withdrawn)
ANALYSIS OF ABNORMAL COMBUSTION PHENOMENON IN A BIPROPELLANT 150N LIQUID ROCKET ENGINE DURING START-UP TRANSIENT
Ruida Chen, Shanghai Institute of Space Propulsion, China

IAC-19.C4.10.14
EMDRIVE THRUST/LOAD CHARACTERISTICS. THEORY, EXPERIMENTAL RESULTS AND A MOON MISSION.
Roger Shawyer, Satellite Propulsion Research Ltd, United Kingdom

IAC-19.C4.10.15
REDUCED KINETIC MECHANISMS FOR METHANE-OXYGEN ROCKETS TO MARS
Scott Martin, Embry-Riddle Aeronautical University, United States

C4.2. Propulsion System (2)

October 23 2019, 09:45 — 143A

Co-Chair(s): Stéphane Henry, ArianeGroup, France; Toru Shimada, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;
Rapporteur(s): Yen-Sen Chen, American Institute of Aeronautics and Astronautics (AIAA), United States; Mario Kobald, German Aerospace Center (DLR), Germany;

IAC-19.C4.2.1
KEYNOTE: OMEGA LAUNCH VEHICLE SOLID BOOST
Kent Rominger, Northrop Grumman Innovation Systems, United States

IAC-19.C4.2.2
ARIANE 6 AND VEGA-C PROGRAMS: THE P120C SRM NOZZLE QUALIFICATION
ERIC GAUTRONNEAU, ArianeGroup SAS, France

IAC-19.C4.2.3
PERFORMANCE EVALUATION OF 4D CARBON-CARBON THROAT INSERT THROUGH HOT TEST OF SOLID MOTOR
Shubham Maurya, Vikram Sarabhai Space Centre, ISRO, Thiruvananthapuram, India

IAC-19.C4.2.4
DESIGN AND DEVELOPMENTAL CHALLENGES OF SLOW BURNING SOLID BOOSTER FOR SUB-ORBITAL HYPER SONIC RE-ENTRY EXPERIMENT
ACHUTANANDA PARHI, Indian Space Research Organization (ISRO), India

IAC-19.C4.2.5
PERFORMANCE AND ENVIRONMENTAL IMPACT PREDICTION OF SRMS. ROAD MAP FOR RELIABLE DATASET OF PARTICLES IN PLUME
Stefania Carlotti, Politecnico di Milano, Italy

IAC-19.C4.2.6
ANALYSIS OF SOLID PROPELLANT COMBUSTION USING IMAGE PROCESSING TECHNIQUES
Sonali Sinha Roy, Purdue University, United States

IAC-19.C4.2.7
MARS ASCENT VEHICLE (MAV) PRELIMINARY ARCHITECTURE ASSESSMENT OVERVIEW
Angie Jackman, NASA, United States

IAC-19.C4.2.8
A STUDY ON NEW HYBRID ROCKET ENGINE WITH MULTI-SECTION SWIRL INJECTION AND AFT COUNTER-SWIRL INJECTION METHOD
Shigeru Aso, Kyushu University, Japan

IAC-19.C4.2.9
REAL-TIME REGRESSION RATE MEASUREMENT OF AN ADDITIVE-MANUFACTURED FUNCTIONAL HYBRID ROCKET FUEL
Kohei Ozawa, Kyushu Institute of Technology, Japan

IAC-19.C4.2.10
COST-EFFECTIVE HYBRID ROCKET LAUNCH VEHICLE OF TAIWAN
Yen-Sen Chen, American Institute of Aeronautics and Astronautics (AIAA), United States

IAC-19.C4.2.11
GREEN FUELS FOR ROCKET PROPULSION: CURRENT STATUS AND FUTURE PERSPECTIVES OF PARAFFIN-BASED FORMULATIONS
Riccardo Bisin, Politecnico di Milano, Italy

IAC-19.C4.2.12
DYNAMIC RESPONSE OF THRUST MODULATION IN HYBRID ROCKET FOR VTVL PROPULSION SYSTEM
Heesang Chae, Konkuk University, Korea, Republic of

IAC-19.C4.2.13
PERFORMANCE ANALYSIS OF N2O/CO2 OXIDIZER MIXTURE WITH PARAFFIN BASED MICRO-ALUMINUM FUEL FOR MARS ASCENT VEHICLES
Ozan Kara, Space Generation Advisory Council (SGAC), Turkey

C4.3. Propulsion Technology (1)

October 22 2019, 09:45 — 143A

Co-Chair(s): Didier Boury, ArianeGroup SAS, France; Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands;
Rapporteur(s): Changjin Lee, Konkuk University, Korea, Republic of; Martin Velander, GKN Aerospace Engine Systems, Sweden;

IAC-19.C4.3.1
KEYNOTE: PROPULSION TECHNOLOGY DEVELOPMENT ACTIVITIES AT NASA
George Schmidt, NASA Glenn Research Center, United States

IAC-19.C4.3.2
FEASIBILITY STUDY ON ELECTRIC PUMPS FEEDING PROPELLANTS TO A ROCKET ENGINE
MITSURU SHIMAGAKI, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.C4.3.3
HOT-FIRE TEST OF THE ETID SANDWICH NOZZLE EXTENSION FOR FUTURE UPPER STAGE ENGINE APPLICATIONS
Klas Lindblad, GKN Aerospace Engine Systems, Sweden

IAC-19.C4.3.4
CHANNEL WALL NOZZLE MANUFACTURING TECHNOLOGY ADVANCEMENTS FOR LIQUID ROCKET ENGINES
Paul Gradl, National Aeronautics and Space Administration (NASA), United States

IAC-19.C4.3.5
PROGRESS IN ADDITIVELY MANUFACTURED COPPER-ALLOY GRCOP-84, GRCOP-42, AND BIMETALLIC COMBUSTION CHAMBERS FOR LIQUID ROCKET ENGINES
Paul Gradl, National Aeronautics and Space Administration (NASA), United States

IAC-19.C4.3.6 (withdrawn)
THE DEVELOPMENT PROCESS FOR A SINGLE-PART ADDITIVELY MANUFACTURED LIQUID ROCKET ENGINE INJECTOR WITH AS-PRINTED ORIFICES
John Targonski, University of Southern California, United States

IAC-19.C4.3.7
LASER METAL DEPOSITION TECHNOLOGY FOR LE-9 ENGINE
Akira Ogawara, Mitsubishi Heavy Industries, Ltd., Japan

IAC-19.C4.3.8
FLAME INITIATION INSIDE THE GAS TORCH IGNITION SYSTEM FOR A HYBRID ROCKET MOTOR
Olexiy Shynkarenko, University of Brasilia, Brazil

IAC-19.C4.3.9
LIQUID UPPER STAGE DEMONSTRATOR ENGINE (LUMEN): STATUS OF THE PROJECT
Tobias Traudt, DLR (German Aerospace Center), Germany

IAC-19.C4.3.10
DEVELOPMENTAL STATUS OF THRUSTER IN MHI (MITSUBISHI HEAVY INDUSTRIES, LTD.)
Daijiro Shiraiwa, MHI, Japan

IAC-19.C4.3.11
INTELLIGENT FLOW PROCESSING SYSTEM FOR HIGH THRUST ENGINES FOR MIXTURE RATIO CONTROL
Elayaperumal Ezhilrajan, Indian Space Research Organization (ISRO), India

IAC-19.C4.3.12
TRANSIENT PROCESS SIMULATION OF 180KN LOX/KEROSENE UPPER STAGE ENGINE WITH ROCKETENGINE SOFTWARE VERSION 2.0
Yuanqi Li, Science and Technology on Liquid Rocket Engine Laboratory, Xi'an Aerospace Propulsion Institute, China

IAC-19.C4.3.13
OPEN CELL METAL FOAM SUPPORTED CATALYSTS FOR HYDROGEN PEROXIDE THRUSTERS
Pawel Surmacz, Institute of Aviation, Poland

C4.4. Electric Propulsion

October 23 2019, 09:45 — 143B

Co-Chair(s): Garri A. Popov, Research Institute of Applied Mechanics and Electrodynamics (RIAME), MAI, Russian Federation; Mariano Andrenucci, Sitael Spa, Italy;
Rapporteur(s): Nicoletta Wagner, Airbus DS GmbH, Germany; Vanessa Vial, Safran Aircraft Engines, France;

IAC-19.C4.4.1
KEYNOTE: "LAB TO LAUNCH"
Christine Charles, Australian National University (ANU), Australia

IAC-19.C4.4.2 (non-confirmed)
ELECTRIC PROPULSION RESEARCH AND DEVELOPMENT AT NASA
George Schmidt, NASA Glenn Research Center, United States

IAC-19.C4.4.3 (non-confirmed)
GT-50 RF ION THRUSTER: DEVELOPMENT STATUS AND PRINCIPAL SOLUTIONS
Ivan Cherniy, Avant - Space Systems, Russian Federation

IAC-19.C4.4.4
ELECTRIC PROPULSION SYSTEM SPS-25 WITH HALL THRUSTER
Olexandr Petrenko, Flight Control LLC, Ukraine

IAC-19.C4.4.5 (withdrawn)
ELECTRIC MICROPROPULSION RESEARCH AT BEIJING INSTITUTE OF TECHNOLOGY
William Yeong Liang Ling, Beijing Institute of Technology, School of Aerospace Engineering, China

IAC-19.C4.4.6
DEVELOPMENT STATUS OF THE HT5K HIGH VOLTAGE MODEL
Tommaso Andreussi, Sitael Spa, Italy

IAC-19.C4.4.7 (non-confirmed)
EXPERIMENTAL DEVELOPMENT OF RADIO-FREQUENCY POWER BASED PLASMA ENGINE FOR DEEP SPACE MISSIONS
Pranav Nath, Liquid Propulsion Systems Centre(LPSC), Indian Space Research Organization (ISRO), India

IAC-19.C4.4.8
THE ARIANEGROUP ELECTRIC PROPULSION PRODUCT FAMILY
Ulrich Gotzig, ArianeGroup, Germany

IAC-19.C4.4.9
VERIFICATION OF MINIATURIZED ELECTRIC PROPULSION SYSTEMS THROUGH A SMALL TEST PLATFORM
Fabrizio Stesina, Politecnico di Torino, Italy

IAC-19.C4.4.10
QUALIFICATION STATUS OF THE PPS®5000 HALL THRUSTER UNIT
Olivier Duchemin, Safran Aircraft Engines, France

IAC-19.C4.4.11
INPPS FLAGSHIP: CLUSTER OF ELECTRIC THRUSTERS
Frank Jansen, DLR (German Aerospace Center), Germany

IAC-19.C4.4.12
DISCUSSION QUASI-STEADY STATE OF OPERATING MPD THRUSTER WITH SPECIALIZED PULSED POWER SUPPLY
Shunichiro Ide, The University of TOKYO, Graduate school, Japan

IAC-19.C4.4.13
ELECTRIC PROPULSION MISSIONS TO URANUS, NEPTUNE AND BEYOND
Edgar Bering, University of Houston, United States

C4.5. Propulsion Technology (2)

October 22 2019, 14:45 — 143A

Co-Chair(s): Walter Zinner, ArianeGroup, Germany; Jacques Gigou, European Space Agency (ESA), France;
Rapporteur(s): Jerome Breteau, European Space Agency (ESA), France; Jean-Claude Traineau, Office National d'Etudes et de Recherches Aérospatiales (ONERA), France;

IAC-19.C4.5.1
AERODYNAMIC INTERACTIONS OF ION THRUSTER PLUME PLASMAS IN VERY LOW EARTH ORBIT
Shaun Andrews, University of Bristol, United Kingdom

IAC-19.C4.5.2
ROBUST TRANSIENT CONTROL OF REUSABLE LIQUID-PROPELLANT ROCKET ENGINES
Sergio Pérez-Roca, Centre National d'Etudes Spatiales (CNES), France

IAC-19.C4.5.3
NOVEL PROPELLANT FEED SYSTEM FOR CHEMICAL IN-SPACE PROPULSION
RITVIK PAREEK, SRM University Chennai, India

IAC-19.C4.5.4
DEVELOPMENT AND QUALIFICATION OF A HIGH PERFORMANCE SOLID STRAPON MOTOR
Mahesh V, India

IAC-19.C4.5.5 (withdrawn)
COMPUTATIONAL STUDY OF AEROSPIKE ENGINES FOR REUSABLE ROCKET SYSTEMS
Sahil Bhatia, University of Petroleum and Energy Studies, India

IAC-19.C4.5.6 (withdrawn)
IMPLEMENTATION OF ADDITIVE MANUFACTURING FOR THE DESIGN & DEVELOPMENT OF THE JESSIE & JAMES LIQUID ROCKET ENGINES
John Targonski, University of Southern California, United States

IAC-19.C4.5.7
ULTRA-HIGH-TEMPERATURE CERAMIC MATRIX COMPOSITES FOR HYBRID ROCKET NOZZLES
Giuseppe Di Martino, University of Naples "Federico II", Italy

IAC-19.C4.5.8
UPDATES ON THE DEVELOPMENT OF A WATER ELECTROLYSIS PROPULSION SYSTEM
Nicholas Harmansa, IRS, University of Stuttgart, Germany

IAC-19.C4.5.9
INVESTIGATION ON THE CONSEQUENCES OF EMPLOYING DUAL THROAT MICRONOZZLE IN MICROSATELLITE PROPULSION
Shreesha Madhu, R.V.College of Engineering, India

IAC-19.C4.5.10
A NEWLY DEVELOPED HIGH PERFORMANCE ADN BASED MONOPROPELLANT WITH A SAFETY EVALUATION
Ju Won Kim, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

IAC-19.C4.5.11
EXPERIMENTAL STUDY OF ABLATION CHARACTERISTICS OF HAFNIUM-BASED COMPOSITES IN THE HYBRID ROCKET NOZZLE
Kyu-Seop Kim, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

IAC-19.C4.5.12 (withdrawn)
NUMERICAL SIMULATION AND EXPERIMENTAL STUDY ON THE ATOMIZATION CHARACTERISTICS OF IMPINGING LIQUID JETS COUPLED WITH FORCED PERTURBATION
Jianan Li, Science and Technology on Liquid Rocket Engine Laboratory, Xi'an Aerospace Propulsion Institute, China

C4.6. New Missions Enabled by New Propulsion Technology and Systems

October 23 2019, 14:45 — 143A

Co-Chair(s): Giorgio Saccoccia, European Space Agency (ESA), The Netherlands; Sabrina Corpino, Politecnico di Torino, Italy;
Rapporteur(s): Elena Toson, T4i, Italy; Elizabeth Driscoll, GomSpace Aps, United States;

IAC-19.C4.6.1 (withdrawn)
AIR, CARBON DIOXIDE AND WATER AS OXIDIZERS FOR METAL-BASED FUELS FOR AEROSPACE PROPULSION AND FUTURE SPACE MISSIONS
ILYES GHEDJATTI, Beijing University of Aeronautics and Astronautics (BUAA), China

IAC-19.C4.6.2
FITTING A HIGH TOTAL IMPULSE ELECTRIC PROPULSION SYSTEM IN A STUDENT CUBESAT TO COMPENSATE THE ATMOSPHERIC DRAG IN LOW-EARTH ORBIT
Florian Marmuse, Laboratoire de Physique des Plasmas (LPP), France

IAC-19.C4.6.3
INDUCTIVE PLASMA THRUSTER (IPT) DESIGN FOR AN ATMOSPHERE-BREATHING ELECTRIC PROPULSION SYSTEM (ABEP)
Francesco Romano, Institute of Space Systems, Universität Stuttgart, Germany

IAC-19.C4.6.4
IMPACT OF PROPULSION SYSTEM CHARACTERISTICS ON THE POTENTIAL FOR COST REDUCTION OF EARTH OBSERVATION MISSIONS AT VERY LOW ALTITUDES
Giacomo Bertolucci, University of Pisa, Italy

IAC-19.C4.6.5
GEO TELECOMMUNICATION SATELLITE: NEW OPPORTUNITIES ENABLED BY A 20KW CLASS HALL THRUSTER
Christopher Andrea Paissoni, Politecnico di Torino, Italy

IAC-19.C4.6.6
3U NANOSATELLITE WITH ELECTRIC PROPULSION AS A MOON PROBE FOR A FLYBY MISSION
Derik Bhardwaj, University of Petroleum and Energy Studies, India

IAC-19.C4.6.7
ROTARY SOLAR SAIL FOR NANOSATELLITE CONSTELLATION FORMATION
Vera Mayorova, Bauman Moscow State Technical University, Russian Federation

IAC-19.C4.6.8
THE VALUE PROPOSITION OF MULTI-MEGAWATT ELECTRIC POWER/PROPULSION FOR THE HUMAN EXPLORATION OF MARS
John Scott, National Aeronautics and Space Administration (NASA), United States

IAC-19.C4.6.9
MANNED MISSION TO EUROPA USING ADVANCED POSITRON DRIVE
Mridul Jain, University of Petroleum and Energy Studies, India

IAC-19.C4.6.10
PROSPECTS FOR THE USE OF HELICON THRUSTERS FOR SPACE EXPLORATION
Iana Kharlan, Russian Federation

IAC-19.C4.6.11
THE KON-TIKI MISSION – DEMONSTRATING LARGE SOLAR SAILS FOR DEEP SPACE MISSIONS
Les Johnson, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, United States

IAC-19.C4.6.12
LAUNCH SYSTEM SOLUTIONS FOR INTERSTELLAR TRAVEL
Steven Vernon, Johns Hopkins University Applied Physics Laboratory, United States

C4.8-B4.5A. Joint Session between IAA and IAF for Small Satellite Propulsion Systems

October 24 2019, 14:45 — 143A

Co-Chair(s): Arnau Pons Lorente, Purdue University, United States; Jeffery Emdee, The Aerospace Corporation, United States;
Rapporteur(s): Elena Toson, T4i, Italy; Elizabeth Jens, Jet Propulsion Laboratory - California Institute of Technology, United States;

IAC-19.C4.8-B4.5A.1
HIGH-MATURITY ELECTRIC PROPULSION SYSTEM FOR ENABLING DEEP SPACE CUBESAT MISSIONS
Michael Tsay, Busek Co. Inc., United States

IAC-19.C4.8-B4.5A.2
LIGHTSAIL 2: CONTROLLED SOLAR SAIL PROPULSION USING A CUBESAT
Bruce Betts, The Planetary Society, United States

IAC-19.C4.8-B4.5A.3
GROUND TEST RESULTS OF THE WATER RESISTOJET PROPULSION SYSTEM AQUARIUS FLIGHT MODEL INSTALLED ON A 6U CUBESAT: EQUULEUS
Mariko Akiyama, University of Tokyo, Japan

IAC-19.C4.8-B4.5A.4
PERFORMANCE IMPROVEMENT OF MEMS MICRO-THRUSTERS THROUGH NOVEL DOUBLE DEPTH AEROSPIKE DESIGN
Chaggai Ganani, Delft University of Technology (TU Delft), The Netherlands

IAC-19.C4.8-B4.5A.5
ENHANCEMENT OF MICROSATELLITES' MISSION CAPABILITIES: INTEGRATION OF REGULUS ELECTRIC PROPULSION MODULE INTO UNISAT-7
Nicolas Bellomo, T4i, Italy

IAC-19.C4.8-B4.5A.6
FREEFORM PROPELLANT DELIVERY SYSTEM FOR CUBESATS
Amanda Steckel, MIT Lincoln Laboratory, United States

IAC-19.C4.8-B4.5A.7
VERSATILE, LOW COST, MICRO-PROPULSION TECHNOLOGY DEMONSTRATION PLATFORM USING THE 3U CUBESAT STANDARD
Sean Crowley, California Polytechnic State University, United States

IAC-19.C4.8-B4.5A.8
THE COMET THRUSTER: ON-ORBIT RESULTS AND EXPANDING PRODUCTION CAPABILITY
Vincent Tarantini, Bradford Space, Inc., United States

IAC-19.C4.8-B4.5A.9
CHARACTERIZATION OF FILM EVAPORATING MICROCAPILLARIES FOR MICRONEWTON THRUSTERS
Steven Pugia, Purdue University, United States

IAC-19.C4.8-B4.5A.10
PET-100: THE ULTIMATE ELECTROSPRAY THRUSTER FOR CUBESAT CONSTELLATIONS
Alberto Garbayo, Added Value Solutions (AVS), Spain

IAC-19.C4.8-B4.5A.11
OVERVIEW OF ELECTRIC AND ADVANCED PROPULSION DEVELOPMENTS AT TU DRESDEN
Martin Tajmar, TU Dresden, Germany

IAC-19.C4.8-B4.5A.12
DEVELOPMENT OF N2O/HDPE HYBRID ROCKET FOR MICROSATELLITE PROPULSION
Landon Kamps, Hokkaido University, Japan

IAC-19.C4.8-B4.5A.13
DEVELOPMENT AND QUALIFICATION OF THE IFM MICRO THRUSTER
Lou Grimaud, ENPULSION, Austria

C4.9. Hypersonic Air-breathing and Combined Cycle Propulsion

October 25 2019, 09:45 — 143A

Co-Chair(s): Riheng Zheng, China Aerospace Science & Industry Corporation (CASIC), China; Elizabeth Driscoll, GomSpace Aps, United States;
Rapporteur(s): Salvatore Borrelli, CIRA Italian Aerospace Research Centre, Italy; Jean-Claude Traineau, Office National d'Etudes et de Recherches Aérospatiales (ONERA), France;

IAC-19.C4.9.1
KEYNOTE: TEST COMPLEX M11: RESEARCH ON FUTURE ORBITAL PROPULSION SYSTEMS AND SCRAMJET ENGINES
Marius Wilhelm, German Aerospace Center (DLR), Germany

IAC-19.C4.9.2
ULTRA-FAST LASER-ABSORPTION TECHNIQUES FOR PERFORMANCE CHARACTERIZATION OF ADVANCED AIRBREATHING HYPERSONIC PROPULSION SYSTEMS
Subith Vasu, University of Central Florida (UCF), United States

IAC-19.C4.9.3
BANTAM AFTER BURNING ROCKET ENGINE (ABRE) PROPULSION SYSTEM FOR A REUSABLE HYPERSONIC TEST BED
Joaquin Castro, Aerojet Rocketdyne, United States

IAC-19.C4.9.4 (withdrawn)
CFD ANALYSIS OF SUPERSONIC TURBULENT COMPRESSIBLE FLOWS WITH DETAILED PLUME STRUCTURE FOR SINGLE AND MULTI-NOZZLES FOR AEROSPACE VEHICLES DESIGN
Muhammad Amjad Sohail, Other, Pakistan

IAC-19.C4.9.5
CHEMICAL TIME SCALES DISTRIBUTION FOR SCRAMJET OPERATION
Sterian Danaila, University POLITEHNICA of Bucharest - Research Center for Aeronautics and Space, Romania

IAC-19.C4.9.6 (non-confirmed)
DEVELOPMENT OF ROCKET-RAMJET PROPULSION BASED ON CONTINUOUSLY ROTATING DETONATION
Piotr Wolanski, Polish Academy of Sciences, Poland

IAC-19.C4.9.7 (withdrawn)
DYNAMIC MODELING OF RAMJET ENGINE BASED ON SIMULATED ANNEALING ALGORITHM
Qin Yan-ping, Xi'an Aerospace Propulsion Institute, China

IAC-19.C4.9.8
EXPERIMENTAL INVESTIGATION OF HYDROCARBON BASED FUELS IN SOLID FUEL RAMJET PROPULSION
Olexiy Shynkarenko, University of Brasilia, Brazil

IAC-19.C4.9.9
EXPERIMENTAL RESEARCH FOR THE EFFECTS OF TRAILING EDGE STRUCTURE ON THE SUPERSONIC MIXING LAYER
Shen Chibing, National University of Defense Technology, China

IAC-19.C4.9.10 (withdrawn)
FUZZY CONTROL OF SHOCK POSITION OF WIDE RANGE RAMJET
Qin Yan-ping, Xi'an Aerospace Propulsion Institute, China

IAC-19.C4.9.11 (withdrawn)
NUMERICAL INVESTIGATION ON NONLIENAR DYNAMIC RESPONSE OF THE RAMJET ENGINE TO FREESTREAM PERTURBATIONS BASED ON WENO SCHEME
Qin Yan-ping, Xi'an Aerospace Propulsion Institute, China

IAC-19.C4.9.12
CFD INVESTIGATION OF RAMJET FLAMEHOLDER NEAR-WAKE FLOW BASED ON OPENFOAM FRAMEWORK
Yi Wang, Science and Technology on Liquid Rocket Engine Laboratory, Xi'an Aerospace Propulsion Institute, China

IAC-19.C4.9.13
PROGRESS ON COMPUTATIONAL DISINTEGRATION AND SEPARATION PROCESS FOR HYPERSONIC VEHICLE
Dun Li, China Academy of Aerospace Aerodynamics (CAAA), China

IAC-19.C4.9.14 (non-confirmed)
RESEARCH ON BOUNDARY LAYER COMBUSTION FOR SKIN-FRICTION REDUCTION
RUI XUE, College of Astronautics, Northwestern Polytechnical University (NPU), China

IAC-19.C4.9.15
NUMERICAL SIMULATION OF TURBULENT FLOW AND COMBUSTION IN RAMJET CHAMBER WITH NON-UNIFORM INFLOW
Yi Wang, Science and Technology on Liquid Rocket Engine Laboratory, Xi'an Aerospace Propulsion Institute, China

C4.IP. Interactive Presentations - IAF SPACE PROPULSION SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Elizabeth Jens, Jet Propulsion Laboratory - California Institute of Technology, United States; Christophe Bonhomme, Centre National d'Etudes Spatiales (CNES), France; Yen-Sen Chen, American Institute of Aeronautics and Astronautics (AIAA), United States; Mario Kobald, German Aerospace Center (DLR), Germany;

IAC-19.C4.IP.1
TRANSIENT SIMULATION OF THE IGNITION OVER-PRESSURE PHENOMENON IN THE ALTITUDE TEST OF THE STAGED-COMBUSTION-CYCLE ROCKET ENGINE
Hongyue Wang, Beijing institute of aerospace testing technology, China

IAC-19.C4.IP.2
PARAMETRIC PERFORMANCE EVALUATION OF LIQUID INJECTION THRUST VECTOR CONTROL IN HYBRID ROCKETS
Eunkwang Lee, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

IAC-19.C4.IP.3
ANALYSIS OF OPERATING DIAGRAM FOR KEROSENE / OXYGEN-ENRICHED AIR ROTATING DETONATION COMBUSTORS UNDER LEAN FUEL CONDITION
Qiaofeng Xie, Tsinghua University, China

IAC-19.C4.IP.4
PROJECT ICE RABBIT: INTEGRATED LIQUID OXYGEN/LIQUID METHANE PROPULSION SYSTEM FOR FUTURE PLANET EXPLORATION VEHICLE
Cheng Cheng, Shanghai Insitute of Space Propulsion, China

IAC-19.C4.IP.5
PRELIMINARY DESIGN OF HIGH SPEED TEST FACILITY FOR COUNTERFLOW JET EXPERIMENTS REDUCING HEAT AND DRAG
Yuseok Lee, Chungnam National University, Korea, Republic of

IAC-19.C4.IP.6 (withdrawn)
EFFECT OF RESIDUAL STRAIN ON STRUCTURAL INTEGRITY OF SRM GRAIN DURING IGNITION
Jiming CHENG, Northwestern Polytechnical University, China

IAC-19.C4.IP.7
EJECTOR DEVELOPING OF VACUUM IGNITION TEST SYSTEM FOR UPPER-STAGE LH2-LOX ROCKET ENGINES
Fanchao Kong, Beijing institute of aerospace testing technology, China

IAC-19.C4.IP.8
RING ROCKETS
Oleg Aleksandrov, Private individual www.oleg.space, United States

IAC-19.C4.IP.9
DEVELOPMENT OF ADAPTABLE ELECTRODELESS PLASMA PROPULSION SYSTEMS USING EVOLUTIONARY TOPOLOGY OPTIMISATION AND PARTICLE IN CELL SIMULATION
Alexander Ryan, The University of Sydney, Australia

IAC-19.C4.IP.10
THE P-5 ENGINE: A COSTA RICAN, COST-EFFECTIVE, LOW POWER LIQUID ROCKET ENGINE
Roy Ramirez, Purdue University, United States

IAC-19.C4.IP.11
EXPERIMENTAL INVESTIGATION ON DRAG REDUCTION BY PLASMA COUNTERFLOW JETS IN MACH 7 SHOCK TUNNEL
Jaecheong Lee, Chungnam National University, Korea, Republic of

IAC-19.C4.IP.12
PLASMA ASSISTED NITROUS OXIDE DIRECT THERMAL \\ DECOMPOSITION AND COMBUSTION FOR HYBRID ROCKET
Myoungjin Kim, Chosun University, Korea, Republic of

IAC-19.C4.IP.13 (withdrawn)
OPTIMUM DESIGN OF LOX RECIRCULATION SYSTEM IN KSLV-II 1ST STAGE
Youngsuk Jung, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.C4.IP.14
DEVELOPMENT AND VALIDATION OF HIGH-PERFORMANCE HYPERGOLIC HYBRID ROCKET FUEL IGNITOR WITH HYDROGEN PEROXIDE
Junyeong Jeong, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

IAC-19.C4.IP.15
DEVELOPMENT AND TESTING OF A HIGH-PERFORMANCE 3D PRINTED INCONEL RESISTOJET
Giulio Coral, University of Tokyo, Japan

IAC-19.C4.IP.16
PLUME SIMULATION OF HAN THRUSTER FOR GREEN PROPELLANT APPLICATION
Kyun Ho Lee, Sejong University, Korea, Republic of

IAC-19.C4.IP.17
INNOVATIVE VRD SOLUTION FOR DEEP SPACE MISSIONS
Artem Madatov, Ukraine

IAC-19.C4.IP.18 (withdrawn)
THE LH2/LOX CRYOGENIC PROPULSION TECHNOLOGY FOR FUTURE DEEP SPACE EXPLORATION
Han JI, Beijing Union University, China

IAC-19.C4.IP.19
THE CRYOGENIC PROPULSION TECHNOLOGY FOR FUTURE DEEP SPACE EXPLORATION
Han JI, Beijing Union University, China

IAC-19.C4.IP.20 (withdrawn)
DETERMINATION OF COMPOSITE SOLID PROPELLANT RELAXATION MODULUS MASTER CURVES FROM DYNAMIC MECHANICAL ANALYSIS
Wagner Kim Amaral Silva, Avibras Indústria Aeroespacial S.A., Brazil

IAC-19.C4.IP.21
THE IPG6-B AS A RESEARCH FACILITY TO SUPPORT FUTURE DEVELOPMENT OF ELECTRIC PROPULSION
Jens Schmidt, Baylor University, Germany

IAC-19.C4.IP.22
OVERVIEW OF RESEARCH ON NUCLEAR THERMAL ROCKET NOZZLES AT OSU
Nick Salamon, The Ohio State University College of Engineering, United States

IAC-19.C4.IP.23
CHARACTERIZATION OF AN ADAPTIVE HALL THRUSTER
Nicholas Proulx, Royal Military College, Canada

IAC-19.C4.IP.24
INFLUENCE RULE AND GLOBAL SENSITIVITY ANALYSIS OF PARAMETERS DURING CURE PROCESS OF SRM COMPOSITE CASE
Qun Liang, Northwestern Polytechnical University, China

IAC-19.C4.IP.25 (non-confirmed)
NUMERICAL SIMULATION STUDY ON OXIDATION COKING OF HYDROCARBON FUEL IN THE PRESENCE OF ELECTROSTATIC FIELD
Dan Jin, Harbin Institute of Technology, China

IAC-19.C4.IP.26 (non-confirmed)
EXPERIMENTAL AND NUMERICAL STUDY ON CHARGING PROPERTIES OF CIGARETTE GRANULES UNDER ELECTROSTATIC FIELD
Bowen Yang, Harbin Institute of Technology, China

IAC-19.C4.IP.27 (non-confirmed)
EFFECT OF COMBUSTION ON SUPERSONIC FILM COOLING BY HYDROCARBON
Li Xingtai, China

IAC-19.C4.IP.28 (non-confirmed)
THE EFFECT OF THE REGENERATIVE COOLING PROCESS ON THE SUPERSONIC COMBUSTION INSIDE A STRUT-BASED SUPERSONIC COMBUSTOR
Huimin Tian, Harbin Institute of Technology, China

IAC-19.C4.IP.29
ON THE EFFECTS OF THERMOACOUSTICS ON SOOT FORMATION AND FLAME INSTABILITY
Rahul Ravi Ravichandran, SRM University, kattankulathur,chennai,INDIA, India

IAC-19.C4.IP.30
STUDY OF DUAL-CATALYTIC BED SCALE-UP PARAMETERS FOR HIGH TEST HYDROGEN PEROXIDE THRUSTERS
Sangwoo Jung, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

IAC-19.C4.IP.31
COMBUSTION AND PROPULSIVE CHARACTERISTICS OF POTENTIAL HYBRID ROCKET PROPELLANT
Aditya Virkar, SRM University, kattankulathur,chennai,INDIA, India

IAC-19.C4.IP.32
THE PROJECTS OF THE RAPID INTERSTELLAR EXPEDITIONS.
Oleg Aleksandrov, Private individual www.oleg.space, United States

IAC-19.C4.IP.33 (withdrawn)
PRELIMINARY EVALUATION OF ENGINE HEALTH MONITORING FOR HALL THRUSTER
Christopher Andrea Paissoni, Politecnico di Torino, Italy

IAC-19.C4.IP.34
THE EFFECT OF FUEL LENGTH ON THE REGRESSION RATE IN SWIRLING-OXIDIZER-FLOW-TYPE HYBRID ROCKET USING A LIQUEFYING FUEL
Yo Kawabata, Chiba Institute of Technology, Japan

IAC-19.C4.IP.35
ELECTRIC PROPULSION'S RATIONAL APPLICATION RANGE ON THE SMALL SPACECRAFTS
Alexey Sidorov, Dnipropetrovsk National University named after Oles Gonchar, Ukraine

D1. IAF SPACE SYSTEMS SYMPOSIUM

Coordinator(s): Reinhold Bertrand, European Space Agency (ESA), Germany; Jill Prince, National Aeronautics and Space Administration (NASA), United States;

D1.1. Innovative and Visionary Space Systems

October 21 2019, 15:00 — 145B

Co-Chair(s): Tibor Balint, Art Center College of Design, United States; Peter Dieleman, National Aerospace Laboratory (NLR), The Netherlands;
Rapporteur(s): Camillo Richiello, CIRA Italian Aerospace Research Centre, Italy;

IAC-19.D1.1.1
IPERDRONE ROADMAP FOR NEW ON ORBIT SERVICES PERFORMED BY SPACE DRONES
Samantha Ianelli, Italian Space Agency (ASI), Italy

IAC-19.D1.1.2
THE DEVELOPMENT OF DYNAMIC GUIDANCE AND NAVIGATION ALGORITHMS FOR AUTONOMOUS ON-ORBIT MULTI-SATELLITE AGGREGATION
Ryan Duong, Viterbi School of Engineering, USC, United States

IAC-19.D1.1.3
HUMAN AGENCY AND AUTONOMY IN LONG DURATION HUMAN EXPLORATION
Stéphane Grès, University, France

IAC-19.D1.1.4
SIMULATING THE CONSTRUCTION OF CONCEPTUAL SPACE STRUCTURES TO EXPLORE THE POTENTIAL OF COMBINED ASTEROID MINING AND SPACE-BASED 3D MANUFACTURING
Angelo C.J. Vermeulen, Delft University of Technology (TU Delft), The Netherlands

IAC-19.D1.1.5
LEVERAGING ADDITIVE MANUFACTURING TO ENABLE DEEP SPACE CREWED MISSIONS
Matthew McGrath, Student, France

IAC-19.D1.1.6
PICO-SATELLITE PLATFORMS AS EFFECTIVE SENSORS FOR IN-SITU ASTEROID CHARACTERIZATION
Silvana Radu, Delft University of Technology (TU Delft), The Netherlands

IAC-19.D1.1.7
SMALL SATELLITE MISSION DESIGN SUPPORTED BY TRADESPACE EXPLORATION WITH CONCURRENT ENGINEERING: SPACE RIDER OBSERVER CUBE CASE STUDY
Sabrina Corpino, Politecnico di Torino, Italy

IAC-19.D1.1.8
INNOVATIVE SENSOR-BASED NETWORK FOR AUTONOMOUS ON-ORBIT STRUCTURAL HEALTH MONITORING
Aloisia Russo, Politecnico di Milano, Italy

IAC-19.D1.1.9
A VENUSIAN SERVICE DOCK
Taylor Phillips-Hungerford, United States

D1.2. Space Systems Architectures

October 22 2019, 09:45 — 145B

Co-Chair(s): Franck Durand-Carrier, Centre National d'Etudes Spatiales (CNES), France; Peter Dieleman, National Aerospace Laboratory (NLR), The Netherlands;
Rapporteur(s): Jill Prince, National Aeronautics and Space Administration (NASA), United States;

IAC-19.D1.2.1
KEYNOTE: MISSION AND SPACECRAFT DESIGN CHALLENGES OF THE SUN-EARTH L5 POINT LAGRANGE SPACE WEATHER MONITORING MISSION
Ingo Gerth, OHB System AG, Germany

IAC-19.D1.2.2
A PRELIMINARY ARCHITECTURE OPTIMIZATION FOR IN-SPACE ASSEMBLED TELESCOPES
William Sanchez, Massachusetts Institute of Technology (MIT), United States

IAC-19.D1.2.3
DESIGN OPTIMIZATION OF A SPACE VIRTUAL TELESCOPE MISSION USING A CUBESAT SWARM
Hyeongjun Park, New Mexico State University, United States

IAC-19.D1.2.4
DISTRIBUTED CORRELATORS FOR SATELLITE SWARMS
Raj Thilak Rajan, Delft Institute Of Technology (TU Delft), The Netherlands

IAC-19.D1.2.5
MISSION AND SYSTEM ARCHITECTURE FOR AN OPERATIONAL NETWORK OF EARTH OBSERVATION SATELLITE NODES
Stefania Tonetti, Deimos Space SLU, Spain

IAC-19.D1.2.6 (withdrawn)
SA-4S – TRL INCREASE ACTIVITIES AND PRELIMINARY RESULTS FOR THE SAB AEROSPACE SEPARATION SYSTEM
Manuele Scipioni, SAB AEROSPACE SRL, Italy

IAC-19.D1.2.7
CONCEPT FOR THE NASA POWER AND PROPULSION ELEMENT LEVERAGING A COMMERCIAL SATELLITE BUS
Ty Lee, SSL/MDA, United States

IAC-19.D1.2.8
APPLYING THE MODEL-BASED CONCEPTUAL DESIGN APPROACH TO ADCS DEVELOPMENT: A CASE STUDY OF A CUBESAT SWARM MISSION
Yaroslav Menshenin, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.D1.2.9
SWARM RPO AND DOCKING SIMULATION ON A 3DOF AIR BEARING PLATFORM
Rahul Rughani, University of Southern California, United States

D1.3. Technologies to Enable Space Systems

October 22 2019, 14:45 — 145B

Co-Chair(s): Steven Arnold, The John Hopkins University Applied Physics Laboratory, United States; Xavier Roser, Thales Alenia Space France, France;
Rapporteur(s): Eiichi Tomita, Japan Aerospace Exploration Agency (JAXA), Japan;

IAC-19.D1.3.1
KEYNOTE: BEPICOLOMBO - THE STATE OF ART FOR THE EXPLORATION OF MERCURY
Mauro Patroncini, Thales Alenia Space Italia (TAS-I), Italy

IAC-19.D1.3.2
IMPLEMENTATION OF MACHINE LEARNING METHODS ON FPGA FOR ONBOARD SATELLITE OPERATION
Kiruki Cosmas Raymond, Kyushu Institue of Technology, Japan

IAC-19.D1.3.3
GENERATIVE IN-SPACE MANUFACTURING OF LARGE STRUCTURES BY EXTRUSION OF UV-CURABLE POLYMER RESIN
Patricio Maier, Munich University of Applied Sciences, Germany

IAC-19.D1.3.4
SOFTWARE SYSTEMS ENGINEERING: THE UNDERLYING INFRASTRUCTURE FOR ENABLING AND REPURPOSING SPACE SYSTEMS
Martin Ristov, MDA, Canada

IAC-19.D1.3.5
INTEGRATED RESEARCH PLATFORM FOR AFFORDABLE SATELLITES
Tina Stäbler, German Aerospace Center (DLR), Germany

IAC-19.D1.3.6
LOW TEMPERATURE TECHNOLOGIES AND ARCHITECTURE FOR EXTREME ENVIRONMENTS
Diego A. Urbina, Space Applications Services N.V./S.A, Belgium

IAC-19.D1.3.7
CENTRALIZED VISUAL BASED NAVIGATION AND CONTROL OF A SWARM OF SATELLITES FOR ON ORBIT SERVICING
Renato Volpe, Sapienza University of Rome, Italy

IAC-19.D1.3.8
SEQUENCIAL FRAMEWORK BY METRICS RELATED TO FPGA COTS
Adilson Barbosa, National Institute for Space Research - INPE, Brazil

IAC-19.D1.3.9
RESOURCE MAPPING IN EXTREME ENVIRONMENTS
Sang Choi, NASA, United States

D1.4A. Space Systems Engineering - Methods, Processes and Tools (1)

October 24 2019, 09:45 — 145B

Co-Chair(s): Dapeng Wang, Beihang University, China; Dmitry Payson, Russian Federation;
Rapporteur(s): Franck Durand-Carrier, Centre National d'Etudes Spatiales (CNES), France; Geilson Loureiro, Instituto Nacional de Pesquisas Espaciais (INPE), Brazil;

IAC-19.D1.4A.1
ROBUST DECISION MAKING FOR LUNAR RESOURCE UTILIZATION
Shunichiro Nomura, The University of TOKYO, Graduate school, Japan

IAC-19.D1.4A.2
OPTIMIZING CONSTELLATION DESIGN USING KNOWLEDGE-DRIVEN OPTIMIZATION: TAT-C ML'S TRADESPACE SEARCH EXECUTIVE
Prachi Dutta, Texas A&M University, United States

IAC-19.D1.4A.3
QUANTIFYING THE IMPACT OF SYSTEMS INTERDEPENDENCIES IN SPACE SYSTEMS ARCHITECTURES
Cesare Guariniello, Purdue University, United States

IAC-19.D1.4A.4
A COMPONENT-RESOURCE MODEL FOR EVOLUTIONARY SPACECRAFT DESIGN
Matthew Marcus, University of Maryland, College Park, United States

IAC-19.D1.4A.5
SYSTEMS CONCURRENT ENGINEERING TECHNIQUES APPLIED TO MAP AND MONITOR THE CORAL REEF IN THE BRAZILIAN COAST USING A SATELLITE MISSION
Andreia Fatima Sorice Genaro, Brazil

IAC-19.D1.4A.6
VAMEX-VTB – A MODULAR VIRTUAL TESBED FOR MULTIMODAL AUTONOMOUS PLANETARY MISSIONS
Jörn Teuber, University of Bremen, Germany

IAC-19.D1.4A.7
THE METHODOLOGICAL INVESTIGATION AND PRACTICAL EXPLORATION OF THE TECHNOLOGY SYSTEM IN AEROSPACE INDUSTRY
wei yi Wei, China Academy of Launch Vehicle Technology (CALT), China

IAC-19.D1.4A.8
AGILE SPACE SYSTEMS MANAGEMENT
Jaime Campos, University of Manitoba, Canada

IAC-19.D1.4A.9
SCRUM SCORING TOOL FOR SPACE ELECTRONICS DEVELOPMENT
Simone Briatore, Skolkovo Institute of Science and Technology, Russian Federation

D1.4B. Space Systems Engineering - Methods, Processes and Tools (2)

October 24 2019, 14:45 — 145B

Co-Chair(s): Geilson Loureiro, Instituto Nacional de Pesquisas Espaciais (INPE), Brazil; Norbert Frischauf, TU Graz, Austria;
Rapporteur(s): Otfrid Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;

IAC-19.D1.4B.1
A NETWORK FLOW-BASED FORMULATION TO OPTIMIZE CAMPAIGN ALTERNATIVES FOR A REFERENCE LUNAR SURFACE BASE
Katherine McBrayer, Georgia Institute of Technology, School of Aerospace Engineering, United States

IAC-19.D1.4B.2
DEFINING AN ARCHITECTURAL FRAMEWORK TO GUIDE ROBOTIC SPACE MISSION DESIGN AND DEVELOPMENT AT NASA GODDARD SPACEFLIGHT CENTER
David Richardson, NASA GSFC, United States

IAC-19.D1.4B.3
IMPLEMENTATION OF HUMAN SYSTEM INTEGRATION WORKSHOP AT NASA FOR HUMAN SPACEFLIGHT
Jackelynne Silva-Martinez, NASA, United States

IAC-19.D1.4B.4
COLLABORATIVE CROSS-ORGANIZATIONAL SINGLE REQUIREMENTS DATABASE IMPACTS ON A PROGRAM AS DEMONSTRATED ON THE NASA IMAP PROGRAM
Maxwell Wieder, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.D1.4B.5 (withdrawn)
A MODEL FOR EACH PHASE OR A MODEL FOR ALL PHASES? - AN ANALYSIS OF THE PRACTICABILITY OF PHASE-SPECIFIC SYSTEM MODELING AND ROUNDTRIP SYSTEM MODEL CONVERSION FOR SPACE MISSION DESIGN
Caroline Lange, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.D1.4B.6
MAINTAINING SPACE SYSTEM CONSISTENCY WITH SINGLE POINT OF TRUTH AND INTEGRATED SIMULATION IN A TEST-DRIVEN-DEVELOPMENT-INSPIRED APPROACH
Alexander Bukmaier, Telespazio VEGA Deutschland GmbH, Germany

IAC-19.D1.4B.7
EVIDENCE-BASED RESILIENCE ENGINEERING OF DYNAMIC SPACE SYSTEMS
Gianluca Filippi, University of Strathclyde, United Kingdom

IAC-19.D1.4B.8
SYSTEMATIC APPROACH FOR THE COST-EFFICIENT REENGINEERING OF AN EXISTING SATELLITE FOR A NEW MISSION WITH ADDITIONAL PAYLOADS, FOR EXAMPLE, ON THE SALSAT MISSION.
Huu Quan Vu, Technische Universität Berlin, Germany

IAC-19.D1.4B.9
MITIGATION OF COTS FPGA FAILURES CAUSED BY RADIATION EFFECTS
Adilson Barbosa, National Institute for Space Research - INPE, Brazil

D1.5. Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards.

October 25 2019, 09:45 — 145B

Co-Chair(s): Eiichi Tomita, Japan Aerospace Exploration Agency (JAXA), Japan; Klaus Schilling, University Wuerzburg, Germany;
Rapporteur(s): Otfrid Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;

IAC-19.D1.5.1
THE PROBA APPROACH: "VALUE FOR MONEY" SPACE PROJECTS
Simon Vanden Bussche, QinetiQ Space nv, Belgium

IAC-19.D1.5.2
THE ACHIEVEMENTS THROUGH 1-YEAR GCOM-C OPERATION AFTER THE LAUNCH
Yoshino Yamada, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.D1.5.3
CASE STUDY OF THE PARKER SOLAR PROBE THERMAL PROTECTION SYSTEM: DEVELOPMENT OF A SYSTEM LEVEL PROCESS FOR HIGH TEMPERATURE TECHNOLOGY ACHIEVEMENT
Elizabeth Congdon, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.D1.5.4
OPS-SAT MISSION: FROM THE IDEA TO SPACE - THE LESSONS WE HAVE LEARNED
Reinhard Zeif, Graz University of Technology (TU Graz), Austria

IAC-19.D1.5.5
ELECTRO-MECHANICAL THRUST VECTOR CONTROL SYSTEMS FOR THE VEGA-C LAUNCHER.
Tillo Vanthuyne, S.A.B.C.A, Belgium

IAC-19.D1.5.6
LESSONS LEARNT IN THE DEPLOYMENT OF SCRUM IN SPACE HARDWARE DEVELOPMENT PROJECTS
Alessandro Golkar, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.D1.5.7
LESSONS LEARNED ON SYSTEMS OF SYSTEMS ENGINEERING: SYSTEMS CONCURRENT ENGINEERING OF A CONSTELLATION OF CUBESAT FORMATIONS
Yuri Matheus Dias Pereira, Instituto Nacional de Pesquisas Espaciais (INPE), Brazil

IAC-19.D1.5.8
SPACE PROGRAM ADVOCACY CAN DISTORT PROJECT MANAGEMENT AND DAMAGE SYSTEMS ENGINEERING
Harry Jones, National Aeronautics and Space Administration (NASA), Ames Research Center, United States

IAC-19.D1.5.9
ADDED VALUE OF EARLY ADOPTION OF THE CONCURRENT ENGINEERING APPROACH THROUGHOUT THE PROJECT LIFE CYCLE
Marta Rocha de Oliveira, European Space Agency (ESA), France

IAC-19.D1.5.10
HOW TO SET REQUIREMENTS AND MANAGE TO THEM
Francesco Bordi, The Aerospace Corporation, United States

D1.6. Cooperative and Robotic Space Systems

October 25 2019, 13:30 — 145B

Co-Chair(s): Igor V. Belokonov, Samara State Aerospace University, Russian Federation; Dapeng Wang, Beihang University, China;
Rapporteur(s): Steven Arnold, The John Hopkins University Applied Physics Laboratory, United States;

IAC-19.D1.6.1
CRYOGENIC REFUELING DEMONSTRATION ON THE ROBOTIC REFUELING MISSION – 3 (RRM3)
Susan Breon, National Aeronautics and Space Administration (NASA), United States

IAC-19.D1.6.2
THE SPACE DRONE™ ADAPTABLE SERVICING SPACECRAFT
Danna Linn Barnett, Effective Space Solutions, Israel

IAC-19.D1.6.3
CLOUDCT – A FORMATION OF COOPERATING NANO-SATELLITES FOR CLOUD CHARACTERISATION BY COMPUTED TOMOGRAPHY
Klaus Schilling, Zentrum für Telematik, Germany

IAC-19.D1.6.4
ASTROBEE FREE-FLYERS: INTEGRATED AND TESTED. READY FOR LAUNCH!
Roberto Carlino, SGT Inc. / NASA Ames Research Center, United States

IAC-19.D1.6.5
HOSTED PAYLOAD DESIGN AND SYSTEMS ENGINEERING FOR THE UN-SNC DREAM CHASER MISSION COLLABORATIVELY DEVELOPED BY INTERNATIONAL ACADEMIA AND INDUSTRY
Victor Hertel, IRS, University of Stuttgart, Germany

IAC-19.D1.6.6
TOWARDS ROBOTIC ON-ORBIT ASSEMBLY OF LARGE SPACE TELESCOPES: MISSION ARCHITECTURES, CONCEPTS, AND ANALYSES
Angadh Nanjangud, Surrey Space Centre - University of Surrey, United Kingdom

IAC-19.D1.6.7
SPACE START – A CONCEPT FOR DYNAMIC SPACE
Morena Bernardini, Thales Alenia Space, France

IAC-19.D1.6.8
TINA: SMALL TORQUE CONTROLLED ROBOTIC ARM FOR EXPLORATION AND SMALL SATELLITES
Maximilian Maier, German Aerospace Center (DLR), Germany

IAC-19.D1.6.9
ON-ORBIT SERVICING ONTOLOGY APPLIED TO RECOMMENDED STANDARDS FOR SATELLITES IN EARTH ORBIT
David Barnhart, University of Southern California, United States

D1.IP. Interactive Presentations - IAF SPACE SYSTEMS SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Reinhold Bertrand, European Space Agency (ESA), Germany; Jill Prince, National Aeronautics and Space Administration (NASA), United States;

IAC-19.D1.IP.1 (withdrawn)
A TRANSFORMABLE SATELLITE CONSTELLATION DESIGN FOR SPACE-BASED MISSILE SENSORS
Thomas G. Roberts, Center for Strategic and International Studies (CSIS), United States

IAC-19.D1.IP.2
MODULAR ARCHITECTURE DESIGN AND EVALUATION OF LARGE SPACECRAFT
Dong Yang, Northwestern Polytechnical University;National Key Laboratory of Aerospace Flight Dynamics, China

IAC-19.D1.IP.3
THE OPEN SOURCE SATELLITE: SPINNING IN "BEST-OF-BREED" SPACE AND TERRESTRIAL INNOVATIONS TO SPIN-OUT AFFORDABLE NEW MISSION IDEAS
Anita Bernie, KISPE Space Systems Limited, United Kingdom

IAC-19.D1.IP.4 (withdrawn)
ACTIVE DISTURBANCE REJECTION COLLISION AVOIDANCE COMPLIANT CONTROL BASED ON PASSIVITY THEORY OF SPACE ROBOT WITH COMPLIANT MECHANISM CAPTURE SPACECRAFT
Haiping Ai, Fuzhou University, China

IAC-19.D1.IP.5
EVALUATION OF THE LEARNING PROCESS OF A DATA-DRIVEN SYSTEMS ENGINEERING METHODOLOGY IN A WORKSHOP ENVIRONMENT
Paolo Guardabasso, Valispace, Portugal

IAC-19.D1.IP.6
DESIGN AND DEVELOPMENT OF AN ADVANCED AI SPACECRAFT SYSTEMS FOR HUMAN EXPLORATION TO MARS AND TRAVEL TO COLONIES INTEGRATING WITH VIRTUAL AI AND AR SYSTEM TO EDUCATE THE NEXT GENERATION
SANDYA RAO, India

IAC-19.D1.IP.7 (withdrawn)
REPETITIVE LEARNING CONTROL BASED ON TERMINAL SLIDING MODE OF SPACE MANIPULATOR SYSTEM WITH ELASTIC BASE AND TWO FLEXIBLE JOINTS
Xiaodong Fu, Fuzhou University, China

D2. IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM

Coordinator(s): Yuguang Yang, China Aerospace Science & Industry Corporation (CASIC), China; Markus Jäger, Airbus Defence & Space, Space Systems, Germany; Randolph Kendall, The Aerospace Corporation, United States;

D2.1. Launch Vehicles in Service or in Development

October 21 2019, 15:00 — 146C

Co-Chair(s): Iwao Igarashi, Mitsubishi Heavy Industries Ltd. - Nagoya Aerospace Systems, Japan; Randolph Kendall, The Aerospace Corporation, United States;
Rapporteur(s): Martin Sippel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-19.D2.1.1 (non-confirmed)
KEYNOTE: FALCON LAUNCH VEHICLE LESSONS LEARNED AND REUSABILITY
Gary Henry, SpaceX, United States

IAC-19.D2.1.2
NASA'S SPACE LAUNCH SYSTEM PROGRESS REPORT
Garry Lyles, NASA Marshall Space Flight Center, United States

IAC-19.D2.1.3
SLS BLOCK 1B EVOLUTION: TECHNOLOGIES AND PERFORMANCE
Terry Haws, Northrop Grumman Corporation, United States

IAC-19.D2.1.4
THE LATEST DEVELOPMENT STATUS OF H3
Yorichika Mihara, Mitsubishi Heavy Industries, Ltd., Japan

IAC-19.D2.1.5
THE ARIANE 6 LAUNCH SYSTEM, DEVELOPMENT UPDATE.
Julio Aprea, European Space Agency (ESA), France

IAC-19.D2.1.6
ARIANE 5 END OF EXPLOITATION
Daniel de Chambure, European Space Agency (ESA), France

IAC-19.D2.1.7
INNOVATION IN SPACE ACCESS: HISTORY OF UNIQUE CAPABILITIES BEGUN WITH ATLAS, CENTAUR, AND DELTA AND THE CONTINUING INNOVATION ON VULCAN
Bernard Kutter, United Launch Alliance, United States

IAC-19.D2.1.8
SOYUZ-V: INTRODUCTION OF THE NEW LAUNCHER IN DEVELOPMENT.
Mila Savelyeva, JSC Glavcosmos, Russian Federation

IAC-19.D2.1.9
THE FIRST RIDE-SHARE MISSION FOR EPSILON LAUNCH VEHICLE AND ITS FUTURE PLANS
Toshiyuki Ise, IHI Aerospace Co, Ltd., Japan

IAC-19.D2.1.10 (non-confirmed)
SKYRORA: FROM SCOTLAND TO SPACE
Katie Miller, Skyrora Ltd, United Kingdom

IAC-19.D2.1.11
A NEW WEB-BASED KNOWLEDGE REPOSITORY OF THE WORLD'S LAUNCH SYSTEMS AND PROGRAMS
Walter Hammond, University of Central Florida (UCF), United States

D2.2. Launch Services, Missions, Operations, and Facilities

October 22 2019, 09:45 — 146C

Co-Chair(s): Francesco Santoro, Altec S.p.A., Italy; Sylvain Guédron, Centre National d'Etudes Spatiales (CNES), France;
Rapporteur(s): Yves Gerard, Airbus Defence & Space, France;

IAC-19.D2.2.1 (withdrawn)
LAUNCHERONE CONCEPT OF OPERATIONS, TEST AND LAUNCH FACILITIES
Pier Michele Roviera, Virgin Galactic, United States

IAC-19.D2.2.2
IMPLEMENTING THE FUTURE OF HORIZONTAL LAUNCH AND LANDING AT THE CAPE CANAVERAL SPACEPORT
Jimmy Moffitt, Space Florida, United States

IAC-19.D2.2.3
REDUCING THE COST OF LAUNCHERS AND LAUNCH RANGES OPERATIONS WITH A NEW PAY-PER-USE END-TO-END PLATFORM
Guillaume Tanier, Telespazio VEGA Deutschland GmbH, Germany

IAC-19.D2.2.4
OCEAN LAUNCH SOLUTION FOR EXPERIMENTAL ROCKETS
Takuma Mori, Japan

IAC-19.D2.2.5
ANDØYA SPACEPORT - EUROPE'S LAUNCH FACILITY FOR SMALL SATELLITES
Sandra Blindheim, Andøya Space Center, Norway

IAC-19.D2.2.6
IOT-BASED ARCHITECTURE OF INTELLIGENT TEST AND LAUNCH CONTROL SYSTEM IN ADVANCED LAUNCH SITE
Litian Xiao, Beijing Special Engineering Design and Research Institute (BSEDI), China

IAC-19.D2.2.7
INCREASED CAPABILITIES AT ESRANGE SPACE CENTER – TESTS OF REUSABLE MOTORS AND STAGES
Christian Krokstedt, Swedish Space Corporation, Sweden

IAC-19.D2.2.8
THE POTENTIAL SPECULATIVE BUBBLE IN THE U.S. COMMERCIAL SPACE LAUNCH INDUSTRY AND THE IMPLICATIONS TO THE UNITED STATES
Moon Kim, RAND, United States

IAC-19.D2.2.9 (withdrawn)
LAUNCH OPERATION OF TEST LAUNCH VEHICLE OF KSLV-II, THE NEW KOREAN LAUNCH VEHICLE
Sunil Kang, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.D2.2.10
UPGRADE OF GAGARIN'S LAUNCH PAD IN BAIKONUR COSMODROME, A HISTORIC SITE FROM WHERE THE WORLD'S FIRST HUMAN SPACEFLIGHT EMANATED, FOR COMMERCIAL LAUNCHES OF SOYUZ-2 LV.
Mila Savelyeva, JSC Glavcosmos, Russian Federation

IAC-19.D2.2.11
PERSPECTIVE ON THE LAUNCH MARKET
Alan Webb, Commercial Space Technologies Ltd., United Kingdom

D2.3. Upper Stages, Space Transfer, Entry and Landing Systems

October 22 2019, 14:45 — 146C

Co-Chair(s): Oliver Kunz, RUAG Space, Switzerland; Brian Smith, Raytheon Canada Limited, Canada;
Rapporteur(s): Oleg Ventskovsky, Yuzhnoye SDO European Representation in Brussels, Ukraine;

IAC-19.D2.3.1
EARTH AEROBRAKING ARCHITECTURES FOR A REUSABLE UPPER STAGE
Nicholas Campbell, University of Colorado Boulder, United States

IAC-19.D2.3.2
THE ADEO PASSIVE DE-ORBIT SUBSYSTEM ANALYSIS, BREADBOARDING & CRITICAL DESIGN: PAVING THE WAY FOR A IN ORBIT DEMONSTRATION IN 2020+
Thomas Sinn, Deployables Cubed, Germany

IAC-19.D2.3.3
TRAJECTORY SIMULATIONS AND SENSITIVITY FOR THE SPEAR PARACHUTE TEST VEHICLE
Lars Pepermans, Delft Aerospace Rocket Engineering (DARE), The Netherlands

IAC-19.D2.3.4
PERFORMANCE EVALUATION AND APPLICATIONS OF FLEXIBLE LEGGED LANDING SYSTEM
Sonali Sinha Roy, Purdue University, United States

IAC-19.D2.3.5 (withdrawn)
AUTOPILOT DESIGN OF A LIFTING BODY GLIDER LAUNCHED FROM A HIGH ALTITUDE BALLOON
Nanette Valentour, University of North Dakota, United States

IAC-19.D2.3.6
ATMOSPHERIC NEURAL NET APPLICATION TO MARTIAN ENTRY, DESCENT, AND LANDING
Shayna Hume, University of Colorado Boulder, United States

IAC-19.D2.3.7
MULTIDISCIPLINARY OPTIMISATION OF FUTURE REUSABLE SPACE VEHICLE.
Sagar Satpathy, Politecnico di Milano, Italy

IAC-19.D2.3.8
SYSTEM DESIGN OF MULTIPURPOSE REUSABLE ORBITER SUITABLE FOR SMALL LAUNCH VEHICLE
Ryoma Yamashiro, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.D2.3.9
THE ORION-EUROPEAN SERVICE MODULE: ONE LAST SMALL STEP UP TO QUALIFICATION
Markus Jäger, Airbus Defence & Space, Space Systems, Germany

IAC-19.D2.3.10
A SYSTEMATIC ASSESSMENT AND COMPARISON OF REUSABLE FIRST STAGE RETURN OPTIONS
Sven Stappert, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.D2.3.11
DEVELOPMENT OF AN AUTONOMOUS ORBITAL PAYLOAD MODULE FOR SOYUZ-2 LV.
Mila Savelyeva, JSC Glavcosmos, Russian Federation

D2.4. Future Space Transportation Systems

October 23 2019, 09:45 — 146C

Co-Chair(s): José Gavira Izquierdo, European Space Agency (ESA), The Netherlands; Carina Dorbath, MT Aerospace AG, Germany;
Rapporteur(s): Nicolas Bérend, ONERA - The French Aerospace Lab, France;

IAC-19.D2.4.1
ARIANE NEXT, A VISION FOR THE NEXT GENERATION OF ARIANE LAUNCHERS
Antoine PATUREAU de MIRAND, Centre National d'Etudes Spatiales (CNES), France

IAC-19.D2.4.2
EUROPEAN NEXT REUSABLE ARIANE (ENTRAIN): A MULTIDISCIPLINARY STUDY ON A VTVL AND A VTHL BOOSTER STAGE
Sven Stappert, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.D2.4.3
DEVELOPMENT STATUS OF JAPANESE REUSABLE EXPERIMENTAL VEHICLE RV-X
Kazunori Mochizuki, Mitsubishi Heavy Industries, Ltd., Japan

IAC-19.D2.4.4
INNOVATION TOWARDS CONCEPTION - HOW TO DESIGN THE FUTURE GENERATIONS OF SPACE TRANSPORTATION SYSTEMS.
Loveneesh Rana, University of Texas at Arlington, United States

IAC-19.D2.4.5
RETRO PROPULSION ASSISTED LANDING TECHNOLOGIES (RETALT): CURRENT STATUS AND OUTLOOK OF THE EU FUNDED PROJECT ON REUSABLE LAUNCH VEHICLES
Ansgar Marwege, DLR (German Aerospace Center), Germany

IAC-19.D2.4.6
PRELIMINARY DESIGN OF SUBORBITAL SPACEPLANE WITH LNG ENGINES BY A JAPANESE UNIVERSITY START-UP WITH THE PARTNERSHIP OF INDUSTRIES
Koichi Yonemoto, Tokyo University of Science, Japan

IAC-19.D2.4.7 (non-confirmed)
SOFTWARE-DEFINED LAUNCH VEHICLE
Li Gang, China

IAC-19.D2.4.8
POWERFUL & FLEXIBLE FUTURE LAUNCHERS IN 2- OR 3-STAGE CONFIGURATION
Martin Sippel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.D2.4.9
CONCEPTUAL DESIGN OPTIMIZATION OF WINGED SUBORBITAL VEHICLES FOR HIGH-SPEED POINT-TO-POINT TRANSPORTATION
Takahiro Fujikawa, Kyushu Institute of Technology, Japan

IAC-19.D2.4.10
A CONCEPTUAL DESIGN STUDY FOR AN UNMANNED, REUSABLE CARGO LUNAR LANDER
Bradford Robertson, Georgia Institute of Technology, United States

D2.5. Technologies for Future Space Transportation Systems

October 23 2019, 14:45 — 146C

Co-Chair(s): Mathieu CHAIZE, ArianeGroup SAS, France; Lin Shen, China Academy of Launch Vehicle Technology (CALT), China;
Rapporteur(s): Andrea Esposito, Northrop Grumman Corporation, Italy;

IAC-19.D2.5.1
ADVANCED MORPHING SPACE TRANSPORTATION SYSTEM FROM SPACE TO EARTH WITH TRIMMED FLIGHT FOR WIDER CROSS RANGE AND DOWN RANGE
Shigeru Aso, Kyushu University, Japan

IAC-19.D2.5.2 (non-confirmed)
AN INNOVATIVE NAVIGATION SCHEME FOR REUSABLE LAUNCH VEHICLE USING MULTI-SOURCE INFORMATION FUSION
Nie Qi, Beijing Aerospace Automatic Control Institute, China

IAC-19.D2.5.3
ARCHITECTURES OF HYBRID NAVIGATION SYSTEMS (HNS) FOR REUSABLE SPACE TRANSPORTATION SYSTEMS
René Schwarz, German Aerospace Center (DLR), Germany

IAC-19.D2.5.4
AN EFFECTIVE PISTON PRESSURIZATION SYSTEM FOR SPACECRAFT BIPROPELLANT TANKS
Noah Gula, The Ohio State University, United States

IAC-19.D2.5.5
DEVELOPMENTS ON LOW COST MANUFACTURING METHODS FOR CYLINDRICAL LAUNCHER STRUCTURES
Daniel Zell, MT Aerospace AG, Germany

IAC-19.D2.5.6
CMC/METALLIC TECHNOLOGY FOR THE REUSABLE SPACE RIDER BODY FLAP ASSEMBLY
Mario De Stefano Fumo, CIRA Italian Aerospace Research Centre, Italy

IAC-19.D2.5.7
DESIGN AND MANUFACTURING STATUS OF ADVANCED STRUCTURES FOR REUSABLE LAUNCH SYSTEMS DEMONSTRATORS WITH RETRO PROPULSION ASSISTED LANDING TECHNOLOGIES (RETALT)
Patrick Starke, MT Aerospace AG, Germany

IAC-19.D2.5.8 (withdrawn)
AUTOPHAGE REUSABLE SSTO LAUNCH VEHICLE
Vitaly Yemets, Dniepropetrovsk National University, Ukraine

IAC-19.D2.5.9
SELF-SUPPORTING MULTI-LAYER INSULATION FOR LAUNCH VEHICLES
Melissa Sampson, Ball Aerospace, United States

IAC-19.D2.5.10
ENHANCING CRITICAL RLV-TECHNOLOGIES: TESTING REUSABLE CRYO-TANK INSULATIONS
Martin Sippel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.D2.5.11
LOW COST AVIONICS FOR A EUROPEAN MICRO LAUNCHER
Emanuele Di Sotto, GMV Innovating Solutions, Spain

IAC-19.D2.5.12 (non-confirmed)
THE APPLICATION OF LASER COMMUNICATION IN FUTURE LAUNCH VEHICLE
Gang Xiang, China Aerospace Science and Technology Corporation (CASC), China

D2.6. Future Space Transportation Systems Verification and In-Flight Experimentation

October 24 2019, 09:45 — 146C

Co-Chair(s): David E. Glass, National Aeronautics and Space Administration (NASA), United States; Christie Maddock, University of Strathclyde, United Kingdom;
Rapporteur(s): Tetsuo Hiraiwa, Japan Aerospace Exploration Agency (JAXA), Japan;

IAC-19.D2.6.1
CALLISTO: A COOPERATION FOR AN IN FLIGHT DEMONSTRATION OF REUSABILITY
Sylvain Guédron, Centre National d'Etudes Spatiales (CNES), France

IAC-19.D2.6.2
WIND TUNNEL INVESTIGATIONS IN CALLISTO - REUSABLE VTVL LAUNCHER FIRST STAGE DEMONSTRATOR
Ansgar Marwege, DLR (German Aerospace Center), Germany

IAC-19.D2.6.3
BRAZILIAN SUBORBITAL ROCKETS FOR HYPERSONIC FLIGHT TESTING: A REVIEW AND A MARKET PERSPECTIVE
Élcio Jeronimo de Oliveira, Luleå University of Technology, Sweden

IAC-19.D2.6.4
PRESENT STATUS OF SYSTEM VERIFICATIONS STUDIES BY REUSABLE VEHICLE EXPERIMENT
Satoshi Nonaka, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.D2.6.5
SPACE RIDER'S POSSIBLE APPLICATIONS
Marie-Christine Bernelin, Dassault Aviation, France

IAC-19.D2.6.6
NUMERICAL AND EXPERIMENTAL ANALYSIS OF AERODYNAMICS OF BIGOS 4 ROCKET, A 1:2 SCALE MODEL OF PERUN SUBORBITAL ROCKET.
Adam Matusiewicz, SpaceForest, Poland

IAC-19.D2.6.7
MINI IRENE PROJECT: GROUND DEMONSTRATOR PLASMA WIND TUNNEL TESTING
Alberto Fedele, CIRA Italian Aerospace Research Centre, Italy

IAC-19.D2.6.8
THE ILR-33 AMBER 2K ROCKET – DEDICATED ACCESS TO SUBORBITAL EXPERIMENTATION
Michal Pakosz, Institute of Aviation, Poland

IAC-19.D2.6.9
NUMERICAL CRASH SIMULATION OF THE REUSABILITY FLIGHT EXPERIMENT REFEX
Waldemar Bauer, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.D2.6.10
ACCESS TO SPACE WITH A REUSABLE AERODYNAMIC VEHICLE
Florin Mingireanu, Romanian Space Agency (ROSA), Romania

IAC-19.D2.6.11
THEORETICAL AND EXPERIMENTAL SOLUTIONS FOR MULTISTAGE QUASI-GUIDED ROCKET
Teodor-Viorel Chelaru, University POLITEHNICA of Bucharest - Research Center for Aeronautics and Space, Romania

IAC-19.D2.6.12
FLIGHT TESTING OF AN AERIAL LIQUID OXYGEN TRANSFER SYSTEM
Charles Lauer, Rocketplane Global, Inc., United States

D2.7. Small Launchers: Concepts and Operations

October 24 2019, 14:45 — 146C

Co-Chair(s): Harry A. Cikanek, National Oceanic and Atmospheric Administration (NOAA), United States; Ulf Palmnäs, SSC, Sweden;
Rapporteur(s): Florian Ruhhammer, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-19.D2.7.1
CURRENT COMMERCIAL LANDSCAPE OF SMALL SATELLITE LAUNCH SERVICES IN THE US AND EUROPE
Claire Wilhelm, Space Policy Institute, George Washington University, United States

IAC-19.D2.7.2
FREQUENT AND RELIABLE SMALL SATELLITE LAUNCH ON ELECTRON
Peter Beck, Rocket Lab, United States

IAC-19.D2.7.3
LAUNCHERONE: THE DEDICATED LAUNCH SOLUTION FOR SMALL SATELLITES
Sirisha Bandla, Virgin Galactic L.L.C, United States

IAC-19.D2.7.4
CONCEPTUAL DESIGN OF A NANOLAUNCHER BASED AEROSPIKE NOZZLE TO SEND CUBESATS FROM MEXICO.
Irving Enrique Gomez Fernandez, Mexico

IAC-19.D2.7.5
BLUE WHALE 1: SYSTEM ENGINEERING AND INTEGRATION RESULTS FOR SOUTH KOREAN MICRO LAUNCHER
Dongyoon Shin, Perigee Aerospace Inc., Korea, Republic of

IAC-19.D2.7.6
DEVELOPMENT AND LAUNCH OPERATION OF A HYDROCARBON/LIQUID OXYGEN ORBITAL/SUB-ORBITAL LAUNCHER FOR SMALL SATELLITES
Ryuichiro KANAI, Interstellar Technologies Inc., Japan

IAC-19.D2.7.7
THE DESIGN, IMPLEMENTATION AND TEST FLIGHT RESULT OF THE FIRST CHINESE COMMERCIAL LAUNCH VEHICLE SYSTEM, ZQ-1
GENG HAO, LandSpace Technology Ltd, China

IAC-19.D2.7.8
A GAME-CHANGING, EUROPEAN SMALL LAUNCH VEHICLE FOR SUSTAINABLE ACCESS TO SPACE
Mario Kobald, HyImpulse Technologies GmbH, Germany

IAC-19.D2.7.9
THE PROMISE OF A SMALL LAUNCHER AFFORDABLE SUPPLY.
Lucie Ritzenthaler, Eurospace, France

IAC-19.D2.7.10
THE DESIGN AND DEVELOPMENT OF A 100 KM TWO-STAGE ELECTROMECHANICAL PARACHUTE RECOVERY SYSTEM
Marie House, Portland State Aerospace Society, United States

IAC-19.D2.7.11
ALTAIR SEMI-REUSABLE AIR-LAUNCH SYSTEM – LESSONS LEARNED FROM SYSTEM DESIGN AND FLIGHT EXPERIMENTS
Nicolas Bérend, ONERA - The French Aerospace Lab, France

IAC-19.D2.7.12
OPTIMIZED PRELIMINARY DESIGN OF A NANOSAT LAUNCH VEHICLE BASED ON SUBORBITAL ROCKET VSB-30
Élcio Jeronimo de Oliveira, Luleå University of Technology, Sweden

IAC-19.D2.7.13
PRINCIPLES FROM 2 SMALL SRM-BASED LAUNCHER DESIGN/ DEVELOPMENTS
Timothy Kibbey, Jacobs, United States

D2.9-D6.2. The Apollo program and the rockets that took humanity to the moon

October 25 2019, 13:30 — 146C

Co-Chair(s): Andrew Aldrin, Florida Institute of Technology, United States; Charles E. Cockrell Jr., National Aeronautics and Space Administration (NASA), United States;
Rapporteur(s): Aline Decadi, HE Space Operations, France;

IAC-19.D2.9-D6.2.1
KEYNOTE: LASTING DEVELOPMENTS FROM APOLLO AND SATURN V
Roger D. Launius, Smithsonian Institution, United States

IAC-19.D2.9-D6.2.2
WHAT CAME FIRST—HOW APOLLO-ERA INFRASTRUCTURE CONTINUES TO PAVE THE WAY FORWARD FOR NASA'S NEXT BIG ROCKET
Jody Singer, NASA, United States

IAC-19.D2.9-D6.2.3
HERITAGE CAPABILITIES ENABLING DEEP SPACE HUMAN EXPLORATION MISSIONS
Michael Sarafin, National Aeronautics and Space Administration (NASA), United States

IAC-19.D2.9-D6.2.4
PAVING THE WAY: THE INFLUENCE OF EARLY RESEARCH AND DEVELOPMENT PROGRAMS ON APOLLO, SATURN, AND LEGACY SYSTEM DEVELOPMENT.
Charles E. Cockrell Jr., National Aeronautics and Space Administration (NASA), United States

IAC-19.D2.9-D6.2.5
THE ENDURING LEGACY OF SATURN-V LAUNCH VEHICLE FLIGHT DYNAMICS AND CONTROL DESIGN PRINCIPLES & PRACTICES
Jeb Orr, National Aeronautics and Space Administration (NASA), Engineering and Safety Center, United States

IAC-19.D2.9-D6.2.6
EVOLUTION AND IMPACT OF SATURN V ON SPACE LAUNCH SYSTEM FROM A GUIDANCE, NAVIGATION, AND MISSION ANALYSIS PERSPECTIVE
Evan Anzalone, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, United States

IAC-19.D2.9-D6.2.7
DEVELOPING TECHNOLOGICAL CAPABILITY IN THE APOLLO PROGRAM FROM PROBLEM-SOLVING F-1 COMBUSTION INSTABILITY
Ronald Freeman, American Institute of Aeronautics and Astronautics (AIAA), United States

D2.IP. Interactive Presentations - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Christophe Bonnal, Centre National d'Etudes Spatiales (CNES), France; Jens Lassmann, ArianeGroup, Germany;
Rapporteur(s): Markus Jäger, Airbus Defence & Space, Space Systems, Germany;

IAC-19.D2.IP.1
DEVELOPMENT OF KSLV-II AND FLIGHT TEST OF ITS ONE STAGED TEST VEHICLE EMPLOYING NEWLY DEVELOPED MAIN ENGINE(KRE-75)
Seung-bo Jin, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.D2.IP.2
THE DESIGN AND DEVELOPMENT OF A MEDIUM-SCALE LIQUID COMMERCIAL LAUNCH VEHICLE NAMED ZQ-2 BASED ON LIQUID OXYGEN AND LIQUID METHANE PROPULSION SYSTEM
GENG HAO, LandSpace Technology Ltd, China

IAC-19.D2.IP.3
MULTIDISCIPLINARY DESIGN ANALYSIS OF A SEMI-REUSABLE TWO-STAGE-TO-ORBIT SMALL PAYLOAD LAUNCH SYSTEM
Christie Maddock, University of Strathclyde, United Kingdom

IAC-19.D2.IP.4
LESSONS AND LEARNS OF LAUNCHING TEST LAUNCH VEHICLE OF KSLV-II CONCERNING LAUNCH COMPLEX DEVELOPMENT
Sunil Kang, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.D2.IP.5
ORBIT TRANSFER ANALYSIS WITH A 3D VIS-VIVA EQUATION
Manfred Ehresmann, Institute of Space Systems, Universität Stuttgart, Germany

IAC-19.D2.IP.6
LIGHTNING PROTECTION SYSTEM: CURRENT STRATEGY AND EVOLUTIONS
François Issac, ONERA - The French Aerospace Lab, France

IAC-19.D2.IP.7 (withdrawn)
SUBOPTIMAL ROCKET LANDING GUIDANCE USING MODEL PREDICTIVE STATIC PROGRAMMING
Cong Zhou, School of Astronautics,Northwestern Polytechnical University, China

IAC-19.D2.IP.8
COMPARATIVE ANALYSIS OF UPPER STAGE AND BUILT-IN PROPULSION SYSTEM FOR GEO SATELLITE LAUNCHES
Roman Mykhalchyshyn, Yuzhnoye State Design Office, Ukraine

IAC-19.D2.IP.9
FEASIBILITY OF AN AUTOMATED STREAMLINED BODY FOR LAUNCH VEHICLES AND LEO TRANSPORTATION
SAYANTAN SAHA, SRM University Chennai, India

IAC-19.D2.IP.10 (withdrawn)
AUTOPHAGE NANOLAUNCHER - A SOLID SSTO LAUNCH VEHICLE
Vitaly Yemets, Dniepropetrovsk National University, Ukraine

IAC-19.D2.IP.11 (withdrawn)
NANOSATS AND SUBORBITAL FEASIBLE MISSIONS FROM A BRAZILIAN LAUNCH CENTER
Filipe Taveiros, Barreira do Inferno Launch Center (CLBI), Brazil

IAC-19.D2.IP.12
OVERVIEW OF AVIONICS ARCHITECTURE ON STAND-ALONE TEST LAUNCH VEHICLE (TLV), SECOND STAGE OF KOREA SPACE LAUNCH VEHICLE-II (KSLV-II)
Seung-Hyun Hwang, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.D2.IP.13
A STUDY ON MISSION DESIGN FRAMEWORK OF REUSABLE VEHICLES FOR POTENTIAL HUMAN SPACEFLIGHT IN LEO
Monish Mathur, University of Petroleum and Energy Studies, India

IAC-19.D2.IP.14
MISSION CONTROL AS A SERVICE - A TURN KEY SOLUTION IN SPACE COMMUNICATIONS
Silver Lodi, SpaceIT, Estonia

IAC-19.D2.IP.15
SAAOPL SYSTEM: ITS DESIGN AND TECHNICAL FEASIBILITY STUDY
Li Wan, United States

IAC-19.D2.IP.16 (withdrawn)
DESIGN AND DEVELOPMENT OF A BRAZILIAN LIQUID ENGINE SOUNDING ROCKET TO TRAIN LAUNCH OPERATIONS.
Gustavo Cirelli Santos, Orbital Engenharia S.A., Brazil

IAC-19.D2.IP.17 (non-confirmed)
MULTI-DISCIPLINARY ANALYSIS OF SINGLE STAGE TO ORBIT (SSTO):SKYLON SPACEPLANE
Ramlingam Gyanasampath Pillai, University of Texas at Arlington, United States

D3. 17th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT

Coordinator(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Alain Pradier, European Space Agency (ESA), The Netherlands;

D3.1. Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development

October 23 2019, 09:45 — 144B

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Maria Antonietta Perino, Thales Alenia Space Italia, Italy;
Rapporteur(s): Anouck Girard, University of Michigan, United States;

IAC-19.D3.1.1
BUILDING A SUSTAINABLE LUNAR ARCHITECTURE – A PROPOSED APPROACH
Andrew Petro, NASA Headquarters, United States

IAC-19.D3.1.2
SCENARIOS & ARCHITECTURES FOR THE MOON VILLAGE
John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-19.D3.1.3
THE MOON VILLAGE: STRATEGIES AND ARCHITECTURES FOR GROWTH.
Charlotte Nassey, International Space University, France

IAC-19.D3.1.4
AN APPROACH TO ENDOGENOUSLY INCENTIVIZING COMMERCIAL PARTICIPATION THROUGH SYSTEM ARCHITECTURE CHOICES
Anna Wieger, George Washington University, United States

IAC-19.D3.1.5
IS THE DEEP SPACE GATEWAY IN THE RIGHT PLACE?
Matjaz Vidmar, The University of Edinburgh, United Kingdom

IAC-19.D3.1.6
INCENTIVE DESIGN FOR COMMERCIAL PARTICIPATION IN SPACE LOGISTICS INFRASTRUCTURE DEVELOPMENT AND DEPLOYMENT
Hao Chen, Georgia Institute of Technology, United States

IAC-19.D3.1.7
LUNAR TOURISM: CATALYST FOR JUMPSTARTING A CISLUNAR ECONOMY
Madhu Thangavelu, University of Southern California, United States

IAC-19.D3.1.8
AUTONOMOUS MULTIROBOT TECHNOLOGIES FOR MARS MINING BASE CONSTRUCTION AND OPERATION
Jekanthan Thangavelautham, University of Arizona, United States

IAC-19.D3.1.9
DO HUMANS HAVE A FUTURE IN MOON OR MARS GRAVITY?
Joseph Carroll, Tether Applications, Inc., United States

IAC-19.D3.1.10
MISSION AND SYSTEM DESIGN FOR EROSS PROJECT: THE EUROPEAN ROBOTIC ORBITAL SUPPORT SERVICES
Sabrina Andiappane, Thales Alenia Space – France

IAC-19.D3.1.11
TOWARDS A COMPREHENSIVE REUSE STRATEGY FOR SPACE CAMPAIGNS
Alejandro Trujillo, Massachusetts Institute of Technology (MIT), United States

D3.2A. Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Systems

October 23 2019, 14:45 — 144B

Co-Chair(s): Paivi Jukola, Aalto University, Finland; Gary Barnhard, XISP-Inc, United States;
Rapporteur(s): Junjiro Onoda, Japan Society for Aeronautics and Space Sciences (JSASS), Japan; Christopher Moore, National Aeronautics and Space Administration (NASA), United States;

IAC-19.D3.2A.1
RESEARCH ON FAULT-TOLERANT AND SELF-ADAPTIVE RECONFIGURABLE MARS EXPLORER WITH DISTRIBUTED INTELLIGENT TECHNOLOGY
Ji Li, China Academy of Launch Vehicle Technology (CALT), China

IAC-19.D3.2A.2
ISRU IN SUPPORT OF AN ARCHITECTURE FOR A SELF-SUSTAINED LUNAR BASE
John Elliott, Jet Propulsion Laboratory - California Institute of Technology, United States

IAC-19.D3.2A.3
THE FIRST COMMERCIAL AIRLOCK MODULE: BUILDING THE COMMERCIAL SPACE MARKET
Brock Howe, Nanoracks, United States

IAC-19.D3.2A.4
PLANETARY AUTONOMOUS CONSTRUCTION SYSTEM (P@X)
A. Scott Howe, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-19.D3.2A.5
FILL 'ER UP! A FUNCTIONAL ANALYSIS OF A CRYOGENIC PROPELLANT DEPOT AT EARTH-MOON L1
Thomas Perrin, Aerodyne Industries, LLC, United States

IAC-19.D3.2A.6
IN-SPACE ASSEMBLY: HUMAN SYSTEM INTEGRATION CONSIDERATIONS
Kara Latorella, National Aeronautics and Space Administration (NASA), United States

IAC-19.D3.2A.7
EVOLUTION OF ISS AS TECHNOLOGY DEVELOPMENT, DEMONSTRATION, AND DEPLOYMENT (TD**3) INFRASTRUCTURE TO SUPPORT COMMERCIALIZATION OF LOW EARTH ORBIT AND BEYOND
Gary Barnhard, XISP-Inc, United States

IAC-19.D3.2A.8
ADAPTIVE IN-SITU RESOURCE UTILISATION (ISRU) SYSTEMS FOR LONG TERM SPACE DEVELOPMENT
Satinder Shergill, Cranfield University, United Kingdom

IAC-19.D3.2A.9
REDUCING THE COST OF LONG-DURATION HUMAN SPACEFLIGHT WITH TORPOR-INDUCING TRANSFER HABITATS
Benjamin Merrel, SpaceWorks Enterprises, Inc. (SEI), United States

IAC-19.D3.2A.10
SPACE SCIENCE AND TECHNOLOGY PARTNERSHIP FORUM: INSIGHTS AND RECOMMENDATIONS FOR COLLABORATION ON IN-SPACE ASSEMBLY
Erica Rodgers, National Aeronautics and Space Administration (NASA), United States

IAC-19.D3.2A.11
SOLAR ELECTRIC GRID DESIGN FOR A SIMPLE MOON BASE
Rochelle Mellish, United States

IAC-19.D3.2A.12
EDEN: EXTRATERRESTRIAL DISTRIBUTED ECOCULTURE NETWORK
Alexander Sullivan, University of Southern California, United States

D3.2B. Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies

October 25 2019, 09:45 — 144B

Co-Chair(s): Alain Pradier, European Space Agency (ESA), The Netherlands; Christopher Moore, National Aeronautics and Space Administration (NASA), United States;
Rapporteur(s): Alain Dupas, European Bank for Reconstruction and Development, France; Gary Barnhard, XISP-Inc, United States;

IAC-19.D3.2B.1
EMERGING AND DISRUPTIVE TECHNOLOGY ASSESSMENT FOR NASA EXPLORATION MISSION CHALLENGES
Julie Williams-Byrd, NASA LaRC, United States

IAC-19.D3.2B.2
EXPERIMENTAL ASSESSMENT OF I3DS PERFORMANCES: A SUITE OF SENSORS FOR ON-ORBIT RENDEZVOUS
Sabrina Andiappane, Thales Alenia Space – France, France

IAC-19.D3.2B.3
ENTRY, DESCENT AND LANDING (EDL) TECHNOLOGY INVESTMENTS WITHIN NASA'S SPACE TECHNOLOGY MISSION DIRECTORATE (STMD)
Michelle Munk, NASA, United States

IAC-19.D3.2B.4
IN SPACE MANUFACTURING AND ASSEMBLY : YES WE CAN!
Christophe FIGUS, Airbus Defence and Space SAS, France

IAC-19.D3.2B.5
NASA'S IN-SPACE MANUFACTURING PROJECT: UPDATE ON MANUFACTURING TECHNOLOGIES AND MATERIALS TO ENABLE MORE SUSTAINABLE AND SAFER EXPLORATION
Tracie Prater, NASA Marshall Space Flight Center, United States

IAC-19.D3.2B.6
A GAME-CHANGING SPACE SYSTEM INTERFACE ENABLING MULTIPLE MODULAR AND BUILDING BLOCK-BASED ARCHITECTURES FOR ORBITAL AND EXPLORATION MISSIONS
Joerg Kreisel, JOERG KREISEL International Consultant (JKIC), Germany

IAC-19.D3.2B.7
KEY TECHNOLOGIES, SYSTEMS, AND INFRASTRUCTURE ENABLING THE COMMERCIALIZATION AND HUMAN SETTLEMENT OF THE MOON AND CISLUNAR SPACE
Stanley K. Borowski (retired), NASA Glenn Research Center, United States

IAC-19.D3.2B.8
IN SITU RESOURCE UTILIZATION - ANALOGUES FOR A LUNAR CONSTRUCTED MAGNETRON VIA 3D PRINTING AND MICROWAVE CASTING
Nicholas Schmidtke, Faculty of Engineering, Carleton University, Canada

IAC-19.D3.2B.9
MULTIPURPOSE CASSEGRAIN SYSTEM
Sang Choi, NASA, United States

IAC-19.D3.2B.10
A TECHNOLOGICAL TRADE-OFF ANALYSIS FOR ASTEROIDS MINING THROUGH CHEMICAL PROCESSES
Valentina Marchese, Politecnico di Milano, Italy

IAC-19.D3.2B.11
COATINGS ON METALS AND PLASTICS FOR LUNAR HABITATS AND EQUIPMENT
Leo Nyman, Aalto University, Finland

IAC-19.D3.2B.12
AGRICULTURE AT A PERMANENT MARS SETTLEMENT
Bruce Mackenzie, United States

D3.4. Space Technology and System Management Practices and Tools

October 25 2019, 13:30 — 144B

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Paivi Jukola, Aalto University, Finland;
Rapporteur(s): Maria Antonietta Perino, Thales Alenia Space Italia, Italy;

IAC-19.D3.4.1
NASA'S CAPABILITY-FOCUSED PROCESS FOR PRIORITIZING NEW TECHNOLOGY INVESTMENTS
Andrew Petro, NASA Headquarters, United States

IAC-19.D3.4.2
IS IT POSSIBLE TO BE SPACE AGILE? A NEW APPROACH FOR SPACE MISSION DESIGN AND IMPLEMENTATION THROUGH AN HYBRID AGILE METHODOLOGY
Walter Calles, Instituto Politécnico Nacional, Mexico

IAC-19.D3.4.3
MAJOR RESULTS OF THE FIRST MINING SPACE SUMMIT
Joseph Mousel, Luxembourg Space Agency, Luxembourg

IAC-19.D3.4.4
SPACE SYSTEM ARCHITECTING FOR COMMERCIAL SUITABILITY: A CASE STUDY IN CISLUNAR SPACE TRANSPORTATION
Tristan Sarton du Jonchay, University of Illinois at Urbana-Champaign, United States

IAC-19.D3.4.5
INVESTMENT STRATEGY FOR THE GOVERNMENT R&D IN SPACE DEVELOPMENT: A CASE OF REPUBLIC OF KOREA
Jae-Min Lee, Korea Institute of S&T Evaluation and Planning, Korea, Republic of

IAC-19.D3.4.6
THE 2020 NASA TECHNOLOGY TAXONOMY
David Miranda, National Aeronautics and Space Administration (NASA), United States

IAC-19.D3.4.7
TECHNOLOGY CONCEPTS EVALUATION AND CONSIDERATIONS FOR FUTURE LUNAR AND CISLUNAR MISSION PLANNING: THE LUNAR GATEWAY CASE
Ana Cristina Baltazar Garduño, International Space University (ISU), France

IAC-19.D3.4.8
ON DESIGN-ENGINEERING AND MANAGING OF COMPLEX STRUCTURES - FROM THE ISS TO THE MOON VILLAGE
Paivi Jukola, Aalto University, Finland

IAC-19.D3.4.9
QUANTITATIVE TECHNOLOGY ASSESSMENT IN SPACE MISSION ANALYSIS
Dale Arney, NASA, United States

IAC-19.D3.4.10
SPACE RESEARCH PROJECT MANAGEMENT CAN BENEFIT FROM ENGINEERING TECHNOLOGY SELECTION METHODS
Harry Jones, National Aeronautics and Space Administration (NASA), Ames Research Center, United States

IAC-19.D3.4.11
APPLYING FUTURE FORESIGHT IN SPACE SECTOR- UAESA CASE STUDY
Sumaya AlHajeri, UAE Space Agency, United Arab Emirates

D3.IP. Interactive Presentations - 17th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT

October 24 2019, 13:15 — IP Area

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Alain Pradier, European Space Agency (ESA), The Netherlands;

IAC-19.D3.IP.1
DESIGN AND DEVELOPMENT OF A PLANETARY COMMUNICATIONS GATEWAY INFRASTRUCTURE FOR SAFE, RELIANT AND STANDALONE DEEP SPACE MISSIONS AND OPERATIONS.
Genaro Grajeda, Mexico

IAC-19.D3.IP.2 (withdrawn)
FROM LEO TO DEEP SPACE: CUBESATS FOR THE NEXT GENERATION OF SPACE EXPLORERS
Mary Grace Kalnay, Concordia University, Canada

IAC-19.D3.IP.3
INCORPORATING SUSTAINABILITY INTO PLANNED LUNAR MISSIONS: BUILDING BLOCKS FOR LUNAR SETTLEMENT THROUGH LUNAR SUSTAINABILITY GOALS
Scott Ritter, International Space University, France

IAC-19.D3.IP.4 (withdrawn)
CONSIDERATIONS FOR NEXT GENERATION LUNAR GATEWAY ROBOTICS WORKSTATION FOR DEEP SPACE EXPLORATION
Rohaan Ahmed, MDA, Robotics and Automation, Canada

IAC-19.D3.IP.5
MODULAR FIELD ROBOTS FOR EXTRATERRESTRIAL EXPLORATION
Troy Cordie, CSIRO, Australia

D4. 17th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE

Coordinator(s): Giuseppe Reibaldi, Moon Village Association (MVA), Austria; Yu Lu, China Academy of Launch Vehicle Technology, China, China;

D4.1. Innovative Concepts and Technologies

October 21 2019, 15:00 — 144B

Co-Chair(s): Roger X. Lenard, LPS, United States; Giorgio Saccoccia, European Space Agency (ESA), The Netherlands;
Rapporteur(s): Xiaowei WANG, China Academy of Launch Vehicle Technology (CALT), China;

IAC-19.D4.1.1
HIVE: A NEW ARCHITECTURE FOR SPACE
Henry Helvajian, The Aerospace Corporation, United States

IAC-19.D4.1.2
MASTER PLANNING AND SPACE ARCHITECTURE FOR A MOON VILLAGE
Daniel Inocente, Skidmore, Owings and Merrill LLP, United States

IAC-19.D4.1.3
AN OASIS ON THE MOON
Phil Smith, Bryce Space and Technology, United States

IAC-19.D4.1.4
STEPS TOWARD SELF-ASSEMBLY OF LUNAR STRUCTURES FROM MODULES OF 3D-PRINTED IN-SITU RESOURCES
Alex Ellery, Space Exploration and Engineering Group, Carleton Univeristy, Canada

IAC-19.D4.1.5
AUTOMATED MULTIDISCIPLINARY DESIGN AND CONTROL OF HOPPING ROBOT SWARMS FOR EXPLORATION OF EXTREME ENVIRONMENTS ON THE MOON AND MARS
Himangshu Kalita, University of Arizona, United States

IAC-19.D4.1.6
MIXED REALITY ARCHITECTURE IN SPACE HABITATS
Tamalee Basu, University of Houston, United States

IAC-19.D4.1.7
TECHNOLOGY ROADMAP: A MULTI-ATTRIBUTE APPROACH APPLIED TO REUSABLE SPACE TRANSPORTATION VEHICLES
Giuseppe Governale, Politecnico di Torino, Italy

IAC-19.D4.1.8
THE SELECTION OF AN ELECTRIC PROPULSION SUBSYSTEM ARCHITECTURE FOR HIGH-POWER SPACE MISSIONS
Christopher Andrea Paissoni, Politecnico di Torino, Italy

IAC-19.D4.1.9
GENERAL RESEARCH ON APPLICATIONS OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN SPACE EXPLORATION ACTIVITIES
Feng QI, China Academy of Launch Vehicle Technology (CALT), China

IAC-19.D4.1.10
SPACE EXPLORATION MISSION FOR COLONIZATION: SPACECRAFT REQUIREMENTS FOR JOURNEY AND IN-SITU EXPEDITION ON SATURN'S MOON-TITAN
Kirti Vishwakarma, University of Petroleum and Energy Studies, India

IAC-19.D4.1.11
ATTOSATS: CHIPSATS, OTHER GRAM-SCALE SPACECRAFT, AND BEYOND
Andreas Makoto Hein, Ecole Centrale de Paris, France

IAC-19.D4.1.12
SINGLE-PERSON SPACECRAFT TRANSFORMS WEIGHTLESS OPERATIONS
Brand Griffin, Genesis Engineering Solutions, Inc., United States

IAC-19.D4.1.13
URBAN PLANNING AT PLANETARY SCALE: ARCHITECTING LOW EARTH ORBIT
Ariel Ekblaw, Massachusetts Institute of Technology (MIT), United States

IAC-19.D4.1.14
CASE STUDY OF AN INTERSTELLAR MISSION TO LUHMAN 16: UNMANNED INTERSTELLAR PROBE POWERED BY GAS CORE NUCLEAR REACTORS
Anand Kumar Singh, University of Petroleum and Energy Studies, India

D4.2. Contribution of Space Activities to Solving Global Societal Issues

October 22 2019, 09:45 — 144B

Co-Chair(s): Giuseppe Reibaldi, Moon Village Association (MVA), Austria; Yu Lu, China Academy of Launch Vehicle Technology, China, China;
Rapporteur(s): Paivi Jukola, Aalto University, Finland;

IAC-19.D4.2.1
SPACE ACTIVITIES SUPPORTING THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS 2030 IN AFRICA AND LATIN AMERICA
Annette Froehlich, LL.M., MAS, European Space Policy Institute (ESPI)German Aerospace Center (DLR), Austria

IAC-19.D4.2.2
TRANSLATING NATIONAL SPACE AMBITIONS INTO ACTIONS: THE UAE SPACE STRATEGY 2030
Naser AlRashedi, UAE Space Agency, United Arab Emirates

IAC-19.D4.2.3
FOSTERING THE UNDERSTANDING OF HOW SPACE CONTRIBUTES TO SOLVING GLOBAL CHALLENGES: THE ESA CATALOGUE
Isabelle Duvaux-Bechon, ESA - European Space Agency, France

IAC-19.D4.2.4
THE INTERNATIONAL SPACE STATION AS A PLATFORM FOR ADDRESSING SUSTAINABILITY AND GLOBAL SOCIETAL ISSUES
Miki Sode, International Space Station (ISS) U.S. National Laboratory, United States

IAC-19.D4.2.5
THE UK INTERNATIONAL PARTNERSHIP PROGRAMME- A UNIQUE APPROACH TO DEMONSTRATING "SPACE FOR SUSTAINABLE DEVELOPMENT"
Chris Lee, UK Space Agency, United Kingdom

IAC-19.D4.2.6
CONTINUING PROGRESS TOWARD THE MOON VILLAGE
John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-19.D4.2.7
CULTURAL SIGNIFICANCE OF OUR MOON
Madhu Thangavelu, University of Southern California, United States

IAC-19.D4.2.8
INCORPORATING SUSTAINABILITY INTO RATIONALES FOR LUNAR SETTLEMENT: ADDRESSING GLOBAL CHALLENGES THROUGH LUNAR SUSTAINABILITY GOALS
Scott Ritter, International Space University, France

IAC-19.D4.2.9
SPACE TECHNOLOGY AND APPLICATIONS TO REVOLUTIONIZE THE ENERGY SECTOR: LESSONS LEARNED FROM INTERNATIONAL MANAGEMENT
Nathalie Kerstens, Eindhoven University of Technology, The Netherlands

IAC-19.D4.2.10
BENEFITS FROM SPACE RESEARCH – FOCUS IN HEALTH AND WELL BEING – A MULTI-DISCIPLINARY RESEARCH PROGRAM PROPOSAL
Paivi Jukola, Aalto University, Finland

IAC-19.D4.2.11
THRIVING IN AND FROM SPACE FOR ALL HUMANKIND
Marguerite Broadwell, NASA, United States

IAC-19.D4.2.12
VISION 2020 THEN AND NOW: AN INTERNATIONAL VIEW OF THE FUTURE
Todd Mosher, Tyvak International, United States

IAC-19.D4.2.13 (withdrawn)
THE ÜBER-CONNECTED SOCIETY – THREAT AND CHANCE - FOR NEXT GENERATION SPACE BASED SYSTEMS IN SUPPORT TO GLOBAL MEGATRENDS
Carsten Borowy, OHB System AG-Bremen, Germany

IAC-19.D4.2.14
SPACE AND THE CITY: LESSONS FROM THE FUTURE
Madhu Thangavelu, University of Southern California, United States

D4.3. Space Elevator Critical Technology Verification and Validation Testing

October 22 2019, 14:45 — 144B

Co-Chair(s): Peter Swan, International Space Elevator Consortium, United States; Akira Tsuchida, International Academy of Astronautics (IAA), Japan;
Rapporteur(s): Yoji Ishikawa, Obayashi Corporation, Japan;

IAC-19.D4.3.1
KEYNOTE: THE ASU INTERPLANETARY INITIATIVE: ADVANCING SOCIETY THROUGH EXPLORATION
Linda Elkins-Tanton, Arizona State University, United States

IAC-19.D4.3.2
TECHNICAL MATURITY AND DEVELOPMENT READINESS OF THE GALACTIC HARBOUR
Michael Fitzgerald, Technology, Architectures, and Integration; LLC, United States

IAC-19.D4.3.3
INTERPLANETARY MISSION SUPPORT FROM GALACTIC HARBOUR APEX ANCHOR
Peter Swan, International Space Elevator Consortium, United States

IAC-19.D4.3.4
OPTIMIZATION OF LOW FUEL AND TIME-CRITICAL INTERPLANETARY TRANSFERS USING SPACE ELEVATOR APEX ANCHOR RELEASE: MARS, JUPITER AND SATURN.
James Torla, Arizona State University, United States

IAC-19.D4.3.5
SPACE ELEVATOR CABLE'S OSCILLATION CAUSED IN SPACE THERMAL ENVIRONMENT
Yoji Ishikawa, Obayashi Corporation, Japan

IAC-19.D4.3.6
PROGRESS REPORT ON THE MULTI-STAGE SPACE ELEVATOR
John Knapman, United Kingdom

IAC-19.D4.3.7
EXPERIMENTAL STUDY ON CLIMBER MECHANISM APPLYING CROSS ROLLER SYSTEM FOR SMALL MANNED SPACE ELEVATOR
Fumihiro Inoue, Shonan Institute of Technology, Japan

IAC-19.D4.3.8
TODAY'S SPACE ELEVATOR STATUS
Peter Swan, International Space Elevator Consortium, United States

IAC-19.D4.3.9
SPACE ELEVATOR DYNAMIC RESPONSE TO PAYLOAD RELEASE
Stephen Cohen, Vanier College, Canada

IAC-19.D4.3.10
ESTIMATION OF SATELLITE AND TETHER DEPLOYMENT STATES IN STARS-C MISSION
Yoshiki Yamagiwa, Shizuoka University, Japan

IAC-19.D4.3.11
CONTROL OF REBOUNDING IN TETHERED CUBESAT SYSTEMS
Shun Yokota, Nihon University, Japan

IAC-19.D4.3.12
A JOURNEY OF STUDENT SPACE ELEVATOR DEVELOPMENT
Tim Wiese, WARR, Germany

IAC-19.D4.3.13
DYNAMICS OF PARTIAL SPACE ELEVATOR WITH PARALLEL TETHERS AND MULTIPLE CLIMBERS
GANGQIANG LI, York University, Canada

IAC-19.D4.3.14
EFFECT OF TETHER DEPLOYMENT AND CLIMBER MOTION IN TETHERED SATELLITE SYSTEMS
Kaishu Koike, Nihon University, Japan

IAC-19.D4.3.15 (withdrawn)
BOOST-TETHERS IN THE MARS-AND-MOONS SYSTEM
Martin Lades, Germany

IAC-19.D4.3.16
SPACE ELEVATOR OPERATION IN PROXIMITY OF ASTEROIDS
Alexander Burov, A.A.Dorodnicyn Computing Centre, FRC Computer Science and Control, Russian Academy of Sciences & Higner School of Economics, Russian Federation

IAC-19.D4.3.17
REMOVING ENERGY FROM A SPACECRAFT USING TETHERS
Alessandra Ferreira, UNESP - São Paulo Sate University, Brazil

IAC-19.D4.3.18 (withdrawn)
STUDY OF TENSION CONTROL COMPONENTS ON EARTH SURFACE PLATFORM FOR SPACE ELEVATOR SYSTEM
Takeyuki Fukazawa, Japan

D4.4. Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond

October 24 2019, 09:45 — 144B

Co-Chair(s): Mae Jemison, 100 Year Starship, United States; Giancarlo Genta, Politecnico di Torino, Italy;
Rapporteur(s): Emeline De Antonio, Centre National d'Etudes Spatiales (CNES), France;

IAC-19.D4.4.1
AN INTERSTELLAR PROBE FOR THE NEXT HELIOPHYSICS DECADAL SURVEY
Ralph L. McNutt, Jr., The John Hopkins University, United States

IAC-19.D4.4.2
INTERSTELLAR PROBE: CROSS-DIVISIONAL SCIENCE ENABLED BY THE FIRST DELIBERATE STEP IN TO THE GALAXY
Pontus Brandt, Johns Hopkins University Applied Physics Laboratory, United States

IAC-19.D4.4.3
DUAL JUPITER SWING-BY TRAJECTORY FOR INTERSTELLAR PROBE
Peter Gath, Airbus Defence and Space - Space Systems, Germany

IAC-19.D4.4.4
THE PHYSICS OF HEAT SHIELDING DURING AN OBERTH MANEUVER
Jason Benkoski, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.D4.4.5
NEAR TERM INTERSTELLAR MISSIONS : FINDING AND REACHING INTERSTELLAR OBJECTS
T. Marshall Eubanks, Space Initiatives Inc., United States

IAC-19.D4.4.6
SUSTAINABLE DESIGN FOR EXTENDED SPACE TRAVEL, APPRISED
Antoine Faddoul, Tony Sky Designs Group, United States

IAC-19.D4.4.7
EFFECT OF ISM IMPACTS ON RELATIVISTIC SPACECRAFT
Jon Drobny, University of Illinois at Urbana-Champaign, United States

IAC-19.D4.4.8
THE BREAKTHROUGH STARSHOT INITIATIVE: PROGRAM UPDATE AND NEXT STEPS
Avi Loeb, Harvard University, United States

IAC-19.D4.4.9
EXPERIMENTAL STUDY OF DYNAMICS OF A LIGHTSAIL UNDER SIMULATED ACCELERATION
Andrew Higgins, McGill University, Canada

IAC-19.D4.4.10
THE STARSHOT COMMUNICATION DOWNLINK
Kevin Parkin, Breakthrough Initiatives, United States

IAC-19.D4.4.11
DESIGN OF A STRATEGY BASED ON AI TO BOOST INTERSTELLAR TRAVEL: THE CASE OF BREAKTHROUGH STARSHOT PROJECT
Diego Jimenez, Private, Colombia

IAC-19.D4.4.12
DIRECTED ENERGY - THE PATH TO RADICAL PROPULSION ADVANCEMENT- ENABLING LONG RANGE POWER BEAMING FOR RAPID INTERPLANETARY AND THE FIRST INTERSTELLAR MISSIONS
Philip Lubin, University of California Santa Barbara, United States

D4.5. Space Resources: Technologies, Systems, Missions and Policies

October 24 2019, 14:45 — 144B

Co-Chair(s): Roger X. Lenard, LPS, United States; Peter Swan, International Space Elevator Consortium, United States;
Rapporteur(s): Helen Tung, Moon Village Association (MVA), United Arab Emirates;

IAC-19.D4.5.1
THE HAGUE INTERNATIONAL SPACE RESOURCES GOVERNANCE WORKING GROUP: FINAL PROGRESS REPORT
Tanja Masson-Zwaan, International Institute of Air and Space Law, Leiden University, The Netherlands

IAC-19.D4.5.2 (withdrawn)
DEVELOPING THE FRAMEWORKS, PROCESSES AND TECHNIQUES TO EVALUATE THE COMMERCIAL VIABILITY OF OFF-EARTH MINING PROJECTS
Sophia Casanova, University of New South Wales, Australia

IAC-19.D4.5.3
EXPERIMENTAL RESULTS OF LONG-ROD PENETRATOR INTO SIMULATED LUNAR SURFACE AND SUBSURFACE CONDITIONS ESTIMATED TO BE WITHIN PERMANENTLY SHADOWED REGIONS
Roger X. Lenard, LPS, United States

IAC-19.D4.5.4
ASTEROID MINING ARCHITECTURES: A ROBUST OPTIMIZATION APPROACH
Andreas Makoto Hein, Ecole Centrale de Paris, France

IAC-19.D4.5.5
BUSINESS MODEL FOR A LONG DURATION MANNED LUNAR MISSION: REFUELING, RESOURCE COMMERCIALIZATION AND REVENUE STREAMS
Paolo Pino, Politecnico di Torino, Italy

IAC-19.D4.5.6
LUNAR SAMPLER - STUDENT DESIGN, BUILD AND TEST PROTOTYPE
Peter Swan, International Space Elevator Consortium, United States

IAC-19.D4.5.7
WATER MINING METHODS FOR THE MOON AND MARS
Paul van Susante, Michigan Technological University, United States

IAC-19.D4.5.8
HOUSTON WE HAVE A LAW. A MODEL FOR NATIONAL REGULATION OF SPACE RESOURCES ACTIVITIES
Antonino Salmeri, University of Luxembourg, Italy

IAC-19.D4.5.9
LEGAL AND POLITICAL EXAMINATION OF BENEFIT-SHARING: BETWEEN INTEREST OF ALL COUNTRIES AND PROVINCE OF ALL MANKIND
Martin Svec, Charles University, Czech Republic

IAC-19.D4.5.10
LAUNCH STATUS CHECK: COMMERCIAL SPACE PROSPECTING IN 2019
Austin Murnane, United States

IAC-19.D4.5.11
CHARACTERIZING AND CLASSIFYING INTERNATIONAL COOPERATION FOR SPACE RESOURCES DEVELOPMENT: ACTORS, OBJECTIVES, AND MODELS
Ian Christensen, Secure World Foundation, United States

IAC-19.D4.5.12
ESTIMATION OF GEOTECHNICAL PROPERTIES OF ICY LUNAR REGOLITH IN CRYOGENIC ENVIRONMENTS
Wenpeng Liu, Colorado School of Mines, United States

IAC-19.D4.5.13 (withdrawn)
A TECHNO-ECONOMIC ANALYSIS OF THE SPACE SOURCED VOLATILES MARKET WITHIN THE EARTH-MOON SPHERE OF INFLUENCE
Robert Matheson, Initiative for Interstellar Studies, France

IAC-19.D4.5.14
ISRU COMMINUTION AND BENEFICIATION FOR PARTICLE SIZE AND SHAPE MODIFICATION
Satinder Shergill, Cranfield University, United Kingdom

IAC-19.D4.5.15
COST BREAKEVEN ANALYSIS OF LUNAR ISRU FOR HUMAN LUNAR SURFACE ARCHITECTURES
Christopher Jones, National Aeronautics and Space Administration (NASA), United States

IAC-19.D4.5.16
AN ASTEROID RESOURCE MODELLING METHODOLOGY FOR UTILISATION PLANNING
Craig Lindley, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia

IAC-19.D4.5.17
THE FUTURE SPACE RESOURCES UTILIZATION VALUE CHAIN
Gary Martin, Luxembourg Space Agency, Luxembourg

D4.IP. Interactive Presentations - 17th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE

October 24 2019, 13:15 — IP Area

Co-Chair(s): Gongling Sun, International Space University, France; Helen Tung, Moon Village Association (MVA), United Arab Emirates;

IAC-19.D4.IP.1
UPWARD SPREAD FORCED SMOLDERING PHENOMENON: EFFECTS AND APPLICATIONS
Vinayak Malhotra, SRM University Chennai, India

IAC-19.D4.IP.2
RING ROCKETS
Oleg Aleksandrov, Private individual www.oleg.space, United States

IAC-19.D4.IP.3
KOBOT ERA: ROBOT MODULARITY FOR OPTIMIZED MANNED SUPERVISION.
Philippe Martin, Telespazio Deutschland GmbH, Germany

IAC-19.D4.IP.4 (withdrawn)
TO BOLDLY GO: A SYSTEMS ENGINEERING PERSPECTIVE ON A STRATEGY FOR THE FUTURE OF ENGINEERING AT NASA
James MacKinnon, NASA Goddard Space Flight Center Greenbelt MD 20771, United States

IAC-19.D4.IP.5
NIAC: THE NASA INNOVATIVE ADVANCED CONCEPTS PROGRAM
Michael LaPointe, National Aeronautics and Space Administration (NASA), United States

IAC-19.D4.IP.6
NEW SUPPLY CHAIN METHODS USING BLOCKCHAIN, 'NEXT GENERATION OF TRACEABILITY' FOR AEROSPACE INDUSTRY.
Pavlo Tanasyuk, University of Cambridge, United Kingdom

IAC-19.D4.IP.7
PHOBOS AND MARS ORBIT AS A BASE FOR MAIN BELT ASTEROID MINING
Martin Elvis, Harvard-Smithsonian Center for Astrophysics (CfA), United States

IAC-19.D4.IP.8
OPTICAL-RF DUAL RELAY COMMUNICATION SYSTEM FOR 1000-AU INTERSTELLAR MISSION
Katelyn Kufahl, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.D4.IP.9
PROJECT HELIOS PHASE I: THE EXTRACTION OF HELIUM-3 IN LUNAR REGOLITH FOR ANEUTRONIC NUCLEAR FUSION
Benjamin Wong, University of British Columbia, Canada

IAC-19.D4.IP.10
CAPACITY BUILDING IN SPACE SCIENCE AND TECHNOLOGY: THE SPACE GENERATION ADVISORY COUNCIL PARTICIPATION TO THE AFRICAN LEADERSHIP CONFERENCE YOUTH FORUM 2018
Abraham Akinwale, Space Generation Advisory Council (SGAC), Nigeria

IAC-19.D4.IP.11
PROSPECT COMMERCIAL ROUTES IN THE EARTH-MOON SYSTEM'S SERVICE VOLUME
Gabriele Impresario, Agenzia Spaziale Italiana (ASI), Italy

IAC-19.D4.IP.12 (withdrawn)
ASSESSING THE FEASIBILITY RANGE OF SOLAR POWERED PLANETESIMALS REDIRECTION OPERATIONS FOR TERRAFORMING
Yegor Morozov, Institute of Biophysics, Russian Academy of Sciences, Siberian Branch; Siberian State Aerospace University, Russian Federation

IAC-19.D4.IP.13
MOON SETTLEMENT (WITH MARS-USE POTENTIAL) TECHNOLOGY
Alejandro Gualtieri, Switzerland

D5. 52nd IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES

Coordinator(s): Jeanne Holm, United States; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom;

D5.1. Quality and safety, a challenge for traditional and new space

October 22 2019, 09:45 — 145A

Co-Chair(s): Manola Romero, 3AF, France; Alexander S. Filatyev, Central AeroHydrodynamic Institute (TsAGI), Russian Federation;

IAC-19.D5.1.1
INTEGRATED SAFETY ANALYSIS: A TOOL FOR THE SAFE OPERATIONS OF COMPLEX ADAPTIVE SYSTEMS
Ronald Freeman, American Institute of Aeronautics and Astronautics (AIAA), United States

IAC-19.D5.1.2
PATAS: QUALITY ASSURANCE FOR MODEL-DRIVEN SOFTWARE DEVELOPMENT
Kilian Höflinger, DLR (German Aerospace Center), Germany

IAC-19.D5.1.3
QUALIFICATION READY FLIGHT SOFTWARE USING MODULE-IN-THE-LOOP VERIFICATION AND AUTOMATED TEST EXECUTION AT THE EXAMPLE OF SALSAT SATELLITE SOFTWARE
Philipp Wüstenberg, TU Berlin, Germany

IAC-19.D5.1.4
THE MAIN STAKES OF THE CNES'S SAFETY POLICY FOR SPACE OPERATIONS
Bernard Chemoul, Centre National d'Etudes Spatiales (CNES), France

IAC-19.D5.1.5
A SAFETY MONITORING METHOD FOR NON-DETERMINISTIC FUNCTIONS IN MISSION CRITICAL TASKS FROM THE COMMERCIAL DRONE INDUSTRY
Matthew Driedger, University of Manitoba, Canada

IAC-19.D5.1.6 (non-confirmed)
IMPLEMENTATION OF SPACE SYSTEMS SAFETY REQUIREMENTS DURING THE AMAZONIA-1 AND CBERS-04A SATELLITES´ PROJECT PHASES
Andreia F. S. Genaro, National Institute for Space Research - INPE, Brazil

IAC-19.D5.1.7
DESIGN FOR RELIABILITY IN PRE-DEVELOPMENT: FAULT DETECTION, ISOLATION AND RECOVERY FOR AUTONOMOUS AND HUMAN MISSIONS IN THE SUN – EARTH – MOON SYSTEM
Irene Farquhar, United States

IAC-19.D5.1.8
MULTI-OBJECTIVE OPTIMIZATION FOR HABITATS IN EXTREME ENVIRONMENTS
Tatiana Volkova, Ecole Polytechnique Fédérale de Lausanne (EPFL), Swiss Space Center (SSC), Switzerland

IAC-19.D5.1.9
MODEL-BASED SAFETY ANALYSIS (MBSA) METHODS IN AEROSPACE APPLICATIONS
Akram Abdellatif, German Aerospace Centre (DLR), Germany

IAC-19.D5.1.10
AUTO-CODING DATA TYPE FRAMEWORK FOR THE OSRA USING MODERN C++
Jan Sommer, German Aerospace Center (DLR), Germany

IAC-19.D5.1.11
THE NEED FOR PROCESS MONITORING IN IN-SPACE MANUFACTURING
Michalis Benakis, Cyprus Space Exploration Organisation (CSEO), Cyprus

D5.2. Knowledge management for space activities in the digital era

October 23 2019, 09:45 — 145A

Co-Chair(s): Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom; Patrick Hambloch, University of Alabama in Huntsville, United States;
Rapporteur(s): Daniel Galarreta, Centre National d'Etudes Spatiales (CNES), France; Stefano Ferretti, European Space Agency (ESA), Italy; Jeanne Holm, United States;

IAC-19.D5.2.1
WHERE DID THAT EQUATION COME FROM? A LEAN AND AGILE APPROACH TO PRESERVING AEROSPACE KNOWLEDGE
John Goodman, Odyssey Space Research, United States

IAC-19.D5.2.2
ROLE OF KNOWLEDGE MANAGEMENT IN INNOVATION AT THE EUROPEAN SPACE AGENCY
Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom

IAC-19.D5.2.3
FOR A KNOWLEDGE CENTRE AS AN ECOSYSTEM
Daniel Galarreta, Centre National d'Etudes Spatiales (CNES), France

IAC-19.D5.2.4
STAKEHOLDERS ANALYSIS IN THE SPACE SECTOR. A DEEP LEARNING VALUE FLOW MODEL SIMULATION.
Antoni Perez-Poch, Universitat Politecnica de Catalunya (UPC BarcelonaTech), Spain

IAC-19.D5.2.5
DEEP SPACE LEARNING – DISRUPTION TOLERANT NETWORKING (DTN) FOR INTERPLANETARY COMMUNITIES OF PRACTICES
Federico Monaco, Università degli Studi di Parma, Italy

IAC-19.D5.2.6
KNOWLEDGE MANAGEMENT IN SOCIO ECONOMIC IMPACT ASSESSMENT STUDIES OF ESA SPACE ACTIVITIES
Maria-Gabriella Sarah, European Space Agency (ESA), France

IAC-19.D5.2.7
THE AUTOMATIC CATEGORISATION OF SPACE MISSION REQUIREMENTS FOR THE DESIGN ENGINEERING ASSISTANT
Audrey Berquand, University of Strathclyde, United Kingdom

IAC-19.D5.2.8
20 YEARS OF DATA AT THE SPACE GENERATION ADVISORY COUNCIL (SGAC) AND ITS ROAD-MAP FOR DATA MANAGEMENT IMPROVEMENTS
Florian Ruhhammer, Space Generation Advisory Council (SGAC), Germany

IAC-19.D5.2.9
BRINGING SPACE TECHNOLOGY AND APPLICATIONS TO THE ENERGY SECTOR: MANAGING INNOVATION ACROSS BOUNDARIES
Nathalie Kerstens, Eindhoven University of Technology, The Netherlands

IAC-19.D5.2.10
BLOCKCHAIN BASED ARCHITECTURE FOR KNOWLEDGE MANAGEMENT IN THE SPACE INDUSTRY
KAMALANATHAN KASPAR, India

D5.3. Space Environment and effects on space missions

October 24 2019, 09:45 — 145A

Co-Chair(s): Jean-Francois Roussel, Office National d'Etudes et de Recherches Aérospatiales (ONERA), France; MENGU CHO, Kyushu Institute of Technology, Japan;
Rapporteur(s): Carlos Soares, NASA Jet Propulsion Laboratory, United States;

IAC-19.D5.3.1
CLASSIFICATION OF SOLAR EVENTS USING MACHINE LEARNING AND SATELLITE ACCELEROMETERS
Kelsey Doerksen, University of Western Ontario (UWO), Canada

IAC-19.D5.3.2
IONOSPHERIC MODELING DURING GEOMAGNETIC STORM FOR SPACE WEATHER APPLICATION
Mpho Tshisaphungo, South African National Space Agency (SANSA), South Africa

IAC-19.D5.3.3
PHENOMENOLOGICAL EARTH RADIATION BELTS MODELING: THE 5DRBM-E AND 5DRBM-P MODELS FOR TRAPPED ELECTRONS AND PROTONS
Lionel Métrailler, European Space Agency (ESA/ESAC), Spain

IAC-19.D5.3.4
ENSURING OPERATIONAL SPACE SAFETY IN AN UNPREDICTABLE SPACE ENVIRONMENT
Andrew Monham, Eumetsat, Germany

IAC-19.D5.3.5
EXTREME AURORAL CHARGING IN HIGH INCLINATION, LOW-EARTH ORBITS
Joseph Minow, National Aeronautics and Space Administration (NASA), United States

IAC-19.D5.3.6
RETURN PLASMA CURRENT INTERACTIONS BETWEEN A CAPACITIVELY COUPLED PLASMA THRUSTER AND SPACECRAFT SURFACES
Amelia Greig, California Polytechnic State University, United States

IAC-19.D5.3.7
RISK ASSESSMENT FOR SPACECRAFT SURFACE DISCHARGING INDUCED BY MICRO SPACE DEBRIS
Jianguo Huang, Beijing Institute of Spacecraft Environment Engineering, China

IAC-19.D5.3.8
ASSESSMENT OF SPACE ENVIRONMENT EFFECTS ON ESD CUBESAT THROUGH NEW SPACESUITE CODE
Jean-Charles Matéo-Vélez, ONERA, France

IAC-19.D5.3.9
HIGH-ENERGY RADIATION TESTING AND EFFECTS ON SPACECRAFT MATERIALS OUTGASSING
Carlos Soares, NASA Jet Propulsion Laboratory, United States

IAC-19.D5.3.10
RADIATION TESTING FOR SPACE APPLICATIONS AT ENEA FRASCATI 35 MEV PROTON LINEAR ACCELERATOR
Giulia Bazzano, ENEA - Ente per le Nuove Tecnologie l'Energia e lAmbiente, Italy

IAC-19.D5.3.11
STATUS AND FUTURE OF RESEARCH ON PLUME INDUCED CONTAMINATION
Martin Grabe, DLR (German Aerospace Center), Germany

IAC-19.D5.3.12
SPACECRAFT MOLECULAR RETURN FLUX CONSIDERATIONS FOR MISSIONS TARGETING DETECTION OF ORGANICS WITH MASS SPECTROMETERS
Carlos Soares, NASA Jet Propulsion Laboratory, United States

D5.4. Cyber-security threats to space missions and countermeasures to address them

October 25 2019, 09:45 — 145A

Co-Chair(s): Stefano Zatti, ESA, Italy; Julien Airaud, Centre National d'Etudes Spatiales (CNES), France;

IAC-19.D5.4.1
BREAKING THE GOLDEN CHAIN OF TRANSPARENCY: CROSSLINKS BETWEEN CYBER THREAT AND BLOCKCHAIN WITHIN SPACE AND GOLD INDUSTRIES
Maria Lucas-Rhimbassen, Université de Toulouse 1 Capitole, France

IAC-19.D5.4.2
SOFTWARE ANTI-SATELLITE CAPABILITIES: DEVELOPING SOFTWARE TOOLS TO COUNTER NEFARIOUS AND ROGUE STATE SPACECRAFT
Jeremy Straub, North Dakota State University, United States

IAC-19.D5.4.3
NEW INTERNET SATELLITE CONSTELLATIONS TO INCREASE CYBER RISK IN ILL PREPARED INDUSTRIES
Joel Scanlan, University of Tasmania, Australia

IAC-19.D5.4.4
COMPARISON OF SOFTWARE BASED VS. HARDWARE ACCELERATED AES-128 ENCRYPTION ALGORITHM FOR SECURE COMMUNICATION WITH NANOSATELLITES
Abeer Vaishnav, R V College of Engineering, Bengaluru, India

IAC-19.D5.4.5
BEHAVIOR COMPUTATION TO VALIDATE AEROSPACE SOFTWARE CYBER SECURITY: A KNOWLEDGE MANAGEMENT PROCESS
Richard Linger, United States

IAC-19.D5.4.6
HYBRID ARTIFICIAL INTELLIGENCE AS A DEFENCE AGAINST CYBER-INTERFERENCE OF MILITARY SATELLITES
Alex Ellery, Space Exploration and Engineering Group, Carleton Univeristy, Canada

IAC-19.D5.4.7
CYBERSECURITY FOR SPACE AS PART OF SECURITY POLICY IN EUROPE
Angeliki Papadimitriou, Université Paris-Sud XI, France

IAC-19.D5.4.8 (withdrawn)
SECURITY-COMPLIANT CYBER MEASURES FOR SATELLITE SYSTEMS
Helena Correia Mendonça, Vieira de Almeida & Associados, Portugal

IAC-19.D5.4.9
CYBER PROTECTION BEST PRACTICES FOR SMALL SATELLITES
Samuel Visner, The MITRE Corporation, United States

IAC-19.D5.4.10
WHAT SPACE MISSIONS CAN LEARN FROM CYBER-SECURITY BREACHES AND COUNTER-MEASURES IN THE TELECOMMUNICATIONS INDUSTRY
Scott Millwood, Germany

IAC-19.D5.4.11
USING OPTICAL COMMUNICATION TO ENHANCE DATA SECURITY
Barry Matsumori, BridgeComm, Inc., United States

D5.IP. Interactive Presentations - 52nd IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES

October 24 2019, 13:15 — IP Area

Co-Chair(s): Jeanne Holm, United States; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom;

IAC-19.D5.IP.1
TOXIC AIR REMOVAL USING AN INDOOR HOUSEPLANT IN THE CORE MODULE OF INFLATABLE LUNAR MARTIAN ANALOG HABITAT AT THE UNIVERSITY OF NORTH DAKOTA
Rakesh Ravi Shankar, University of North Dakota, United States

IAC-19.D5.IP.2
SECURING THE FINAL FRONTIER: A REVIEW OF SECURITY CHALLENGES AND A DISCUSSION OF SOME PROSPECTIVE SOLUTIONS AND WHAT CAN'T BE SOLVED
Jeremy Straub, North Dakota State University, United States

IAC-19.D5.IP.3
SPACE CONCORDIA CUBESAT PROJECT CASE-STUDY: ESTABLISHING LASTING PRACTICES WITH NEW MANAGEMENT APPROACHES
Mary Grace Kalnay, Concordia University, Canada

IAC-19.D5.IP.4
SELF INDUCED FIRE PROPAGATION IN AN ARRAY OF HEAT SOURCES.
Vinayak Malhotra, SRM University Chennai, India

IAC-19.D5.IP.5 (withdrawn)
RISK ANALYSIS AND MANAGEMENT FOR SPACECRAFT SYSTEM ENGINEERING
Dehu Yuan, Shanghai Aerospace Control Technology Institute (SACTI), Shanghai Academy of Spaceflight Technology (SAST), China

D6. IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES

Coordinator(s): John Sloan, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States; Francesco Santoro, Altec S.p.A., Italy;

D6.1. Commercial Spaceflight Safety and Emerging Issues

October 22 2019, 09:45 — 140A

Co-Chair(s): John Sloan, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States; Francesco Santoro, Altec S.p.A., Italy;
Rapporteur(s): Gennaro Russo, Associazione Italiana di Aeronautica e Astronautica (AIDAA), Italy;

IAC-19.D6.1.1
INFORMED CONSENT AND THE UK SPACE INDUSTRY ACT 2018
Thomas Cheney, Northumbria University, United Kingdom

IAC-19.D6.1.2
STREAMLINING FAA COMMERCIAL SPACE TRANSPORTATION REGULATIONS
Wayne Monteith, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States

IAC-19.D6.1.3
UPDATE ON UK REGULATORY REFORM – ENABLING COMMERCIAL SPACEFLIGHT FROM THE UK BY THE EARLY 2020'S
Andrew Ratcliffe, UK Space Agency, United Kingdom

IAC-19.D6.1.4
BEWARE OF THE HYBRIDS: LEGAL ISSUES OF AIR LAUNCHES
Michail Chatzipanagiotis, University of Cyprus, Cyprus

IAC-19.D6.1.5
TOWARDS A NEARSPACE OPERATION MANAGEMENT
Sven Kaltenhaeuser, DLR, German Aerospace Center, Germany

IAC-19.D6.1.6
SURFACE TO SPACE INTEGRATION: MIXED USE OF THE AEROSPACE DOMAIN
Andy Anderegg, The MITRE Corporation, United States

IAC-19.D6.1.7
FAA'S PROPOSED CONSEQUENCE PROTECTION CRITERIA FOR FLIGHT SAFETY SYSTEMS AND FLIGHT ABORT FOR COMMERCIAL SPACE TRANSPORTATION
Paul Wilde, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States

IAC-19.D6.1.8
APPOACHES TO AND METHODS FOR THE INTEGRATION OF SPACE TRAFFIC INTO AIR TRAFFIC
Eduard Gamper, TU Braunschweig, Institute of Space Systems, Germany

IAC-19.D6.1.9
ACHIEVING TECHNICAL STANDARDS FOR COMMERCIAL HUMAN SPACEFLIGHTS: ANALOGIES FROM A HISTORY OF AVIATION
Takuya Wakimoto, Space Policy Institute, George Washington University, United States

IAC-19.D6.1.10
DETECTING UNKNOWN AND UNDERAPPRECIATED (UU) RISKS IN THE PRIVATE SECTOR OF SPACE OPERATIONS AND SAFETY
Ronald Freeman, American Institute of Aeronautics and Astronautics (AIAA), United States

IAC-19.D6.1.11
REVIEW OF THE 2014 FAA RECOMMENDED PRACTICES FOR COMMERCIAL SPACEFLIGHT CREW SAFETY.
Marc M. Cohen, Space Cooperative Inc., United States

IAC-19.D6.1.12
CHALLENGES OF INTEGRATING COMMERCIAL SPACEFLIGHT OPERATIONS INTO THE NATIONAL AIRSPACE SYSTEM
Saul Reza Arcelus, Embry Riddle Aeronautical University Worldwide, Mexico

D6.3. Enabling safe commercial spaceflight: vehicles and spaceports

October 25 2019, 13:30 — 140A

Co-Chair(s): John Sloan, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States; Francesco Santoro, Altec S.p.A., Italy;
Rapporteur(s): Gennaro Russo, TRANS-TECH Srl, Italy;

IAC-19.D6.3.1
ANALYZING SPACEPORT FEASIBILITY VIA AN AUGMENTED POLICY AND BUSINESS FRAMEWORK
Becca Browder, Massachusetts Institute of Technology (MIT), United States

IAC-19.D6.3.2
SUBORBITAL SPACE SAFETY ASSESSMENT
Hamed Gamal, Czech Republic

IAC-19.D6.3.3 (non-confirmed)
CASE STUDY: DESIGN OF A SPACEPORT IN SEVERAL LOCATIONS FOR SPACE TOURISM VIABILITY
Ugur Guven, UN CSSTEAP, United States

IAC-19.D6.3.4
END TO END APPROACH TO FLEXIBLE AND SUSTAINABLE COMMERCIAL SPACEFLIGHT INITIATIVES: EVALUATION OF OPERATIONAL SCENARIOS, SAFETY ASPECTS, SPACEPORTS AND ASSOCIATED ECONOMIC ELEMENTS
Francesco Santoro, Altec S.p.A., Italy

IAC-19.D6.3.5
THE MICHIGAN LAUNCH INITIATIVE – CREATING A NEW POLAR ORBIT LAUNCH SITE USING EXISTING INFRASTRUCTURE
Charles Lauer, Rocketplane Global, Inc., United States

IAC-19.D6.3.6
ROCKETS IN THE AIRSPACE: LEGAL IMPLICATIONS OF AIRCRAFTS AND LAUNCHERS INTERACTIONS
Eloi Petros, IDEST, University Paris Sud, France

IAC-19.D6.3.7
UK LAUNCH FLIGHT SAFETY CONSIDERATIONS AND RESEARCH
Andrew Ratcliffe, UK Space Agency, United Kingdom

IAC-19.D6.3.8
COMMERCIAL HUMAN SPACEFLIGHT DEVELOPMENTS IN JAPAN - THE STATUS OF VEHICLES AND SPACEPORTS
Misuzu Onuki, Space Access Corporation, Japan

IAC-19.D6.3.9
COMMERCIAL SPACEFLIGHT REGULATION: A COMPARATIVE ANALYSIS OF US, UK AND NEW ZEALAND SPACE LAW
Thomas Cheney, Northumbria University, United Kingdom

IAC-19.D6.3.10
A STUDY ON POTENTIAL SPACEPORTS FOR SUBORBITAL SPACE TOURISM IN TAIWAN
Eva Yi-Wei Chang, University of Science & Technology, Taiwan, China

IAC-19.D6.3.11
NEW PUBLIC-PRIVATE PARTNERSHIP MODEL IN ITALIAN SPACE SECTOR
RICCARDO INGROSSO, Italian Space Agency (ASI), Italy

E1. IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM

Coordinator(s): Lisa Antoniadis, Astrocast SA, Switzerland; Seyed Ali Nasseri, Space Generation Advisory Council (SGAC), Canada;

E1.1. Ignition - Primary Space Education

October 21 2019, 15:00 — 144C

Co-Chair(s): Kaori Sasaki, Japan Aerospace Exploration Agency (JAXA), Japan; Carol Carnett, International Space University (ISU), United States;
Rapporteur(s): Christopher Vasko, European Space Agency (ESA), France; Matteo Emanuelli, GomSpace Aps, Denmark;

IAC-19.E1.1.1 (non-confirmed)
KEYNOTE: STEM EDUCATION: LESSONS LEARNED FROM THE CHALLENGER CENTER
Denise Kopecky, Challenger Center for Space Science Education, United States

IAC-19.E1.1.2
BUILDING A CANSAT IN THE CLASSROOM
Roberto Falconi, Ecuadorian Civilian Space Agency (EXA), Ecuador

IAC-19.E1.1.3
FROM CONCEPT TO REALITY: A UNIQUELY DESIGNED PROJECT BASED LEARNING WIND TUNNEL AND ITS IMPACT ON K-12 STUDENTS
Madison Bowersox, University of Alabama in Huntsville, United States

IAC-19.E1.1.4
TRAINING AND ENGAGING THE NEXT GENERATION OF SPACE SCIENTISTS AND ENGINEERS THROUGH THE SPACE EXPLORERS PROGRAM
Parshati Patel, Centre for Planetary Science and Exploration (CPSX), Canada

IAC-19.E1.1.5
AN ELEMENTARY SCHOOL PROGRAM TO PROMOTE STEM EDUCATION LEADING TO A STUDENT-DESIGNED SUBORBITAL SPACEFLIGHT EXPERIMENT
Peter Lee, The Ohio State University, United States

IAC-19.E1.1.6
TRANSFORMING STEAM OUTREACH FROM LOW EARTH ORBIT TO CISLUNAR SPACE: AMATEUR RADIO ON THE INTERNATIONAL SPACE STATION (ARISS) TO THE LUNAR ORBITING PLATFORM-GATEWAY
Frank Bauer, NASA, United States

IAC-19.E1.1.7
USING PUPPETS, SKYPE AND SPACE TO INTRODUCE STEM IN RAINBOW HOUSE EDUCATIONAL CHILDCARE FACILITY, IN JOBSTOWN, IRELAND
Niamh Shaw, Ireland

IAC-19.E1.1.8
EARTH OBSERVATORY FOR KIDS - MAKING NASA DATA ACCESSIBLE TO OUR YOUNG EARTHLINGS
Ginger Butcher, SSAI, United States

IAC-19.E1.1.9
OUR GIRLS INTO THE WONDERS OF THE COSMOS
Cecilia Guadalupe Torres Perea, ATOMX Education, Mexico

E1.2. Lift Off - Secondary Space Education

October 22 2019, 09:45 — 144C

Co-Chair(s): Seyed Ali Nasseri, Space Generation Advisory Council (SGAC), Canada; Christopher Vasko, European Space Agency (ESA), France;
Rapporteur(s): Maruska Strah, World Space Week Association, United States;

IAC-19.E1.2.1
AUSTRALIAN SPACE DESIGN COMPETITION: DESIGNING A HABITAT TO COLLECT AND PROCESS SPACE DEBRIS
Alexander Bowen-Rotsaert, Space Design Competitions Australian Inc. (SDCA), Australia

IAC-19.E1.2.2
THE WOLVERINE CUBESAT DEVELOPMENT TEAM FLIPSAT PROPOSAL: ANALYSIS OF SINGLE BIT FLIPS AS A FUNCTION OF RADIATION HARDENING
Kevin Simmons, BLUECUBE Aerospace, United States

IAC-19.E1.2.3
"A GLANCE TO SPACE" – IAI MBT SPACE ACTIVITIES TO ENCOURAGE YOUNG STUDENTS TO EXCEL IN MATH, SCIENCE, ENGINEERING AND TECHNOLOGY (STEM)
Irit Fried, IAI MBT Space, Israel

IAC-19.E1.2.4
TEACHING TEACHERS TO TEACH STEM
Kevin Cocco, Because Learning, United States

IAC-19.E1.2.5
SPACE AWARENESS PROJECT: OPEN SOURCE, CLASSROOM RESOURCES FOR SPACE EDUCATION
Ramasamy Venugopal, International Astronomical Union (IAU), South Africa

IAC-19.E1.2.6
THE YEAR OF EDUCATION ON STATION
Becky Kamas, NASA, United States

IAC-19.E1.2.7
ZENIT AEROSPACE SPACE 101: A STUDENT INITIATIVE TO AEROSPACE EDUCATION PROMOTION
Rafael Lobo, University of Brasilia, Brazil

IAC-19.E1.2.8
ARAPY PROJECT: USING PAYLOAD DESIGN FOR HIGH ALTITUDE BALLOONS AS A TOOL TO REDUCE THE ACCESS GAP BRING STEAM EDUCATION TO RURAL PARAGUAY
Oscar Matias Gonzalez, Paraguay

IAC-19.E1.2.9
THE EUROPEAN CANSAT COMPETITION – LEARNING STEM BY BUILDING A PICOSATELLITE
Elsa Alfonso Sanchez, ESA - European Space Agency, The Netherlands

IAC-19.E1.2.10
"VIVID MATHEMATICS" AS AN APPROACH TO STRENGTHENING THE RELATIONS BETWEEN SCHOOL SUBJECTS FOR FUTURE AEROSPACE ENGINEERS
Vera Mayorova, Bauman Moscow State Technical University, Russian Federation

IAC-19.E1.2.11
IGNITION OF SPACE ENGINEERING-BASED CAPACITY BUILDING IN CAMBODIA
Pauline Faure, California Polytechnic State University, United States

IAC-19.E1.2.12
USING GAMIFICATION TO PERSUADE MORE WOMEN AND MINORITIES INTO STEM
Justin Park, Intergalactic Education, United States

E1.3. On Track - Undergraduate Space Education

October 22 2019, 14:45 — 144C

Co-Chair(s): Hubert Diez, CNES, France; Camille Alleyne, NASA, United States;
Rapporteur(s): Michal Kunes, Czech Republic;

IAC-19.E1.3.1
PREPARING THE NEXT GENERATION STEM WORKFORCE THROUGH AUTHENTIC NASA EXPERIENCES
Katie Livingood, Oklahoma State University (OSU), United States

IAC-19.E1.3.2
FLY A ROCKET! A NORWEGIAN-ESA EDUCATIONAL PROGRAM
Christoffer Stausland, NAROM - Norwegian Centre for Space-Related Education, Norway

IAC-19.E1.3.3
INTERDISCIPLINARY SPACE LAB: UNDERGRADUATE CURRICULUM INNOVATION UTILISING ASTRONAUT HEALTH AND WELLBEING REQUIREMENTS FOR LONG DURATION SPACE MISSIONS (LDMS)
Sasha Alexander, Western Sydney University, Australia

IAC-19.E1.3.4
REPLICABLE STUDENT ROCKET PROGRAM MODEL FOR UNIVERSITIES IN DEVELOPING COUNTRIES, THE CASE OF THE COSTA RICA INSTITUTE OF TECHNOLOGY.
José Ricardo Campos Mora, Instituto Tecnológico de Costa Rica (TEC), Costa Rica

IAC-19.E1.3.5
ESA ACADEMY'S TRAINING AND LEARNING PROGRAMME: TRAINING OPPORTUNITY FOR UNIVERSITY STUDENTS
Hugo Marée, European Space Agency (ESA/ESTEC), The Netherlands

IAC-19.E1.3.6
UNDERGRADUATE AEROSPACE ENGINEERING PROGRAM AT THE SCHOOL OF ENGINEERING OF THE NATIONAL AUTONOMOUS UNIVERSITY OF MÉXICO
Jose Alberto Ramirez Aguilar, High Technology Uniti (UAT) Faculty of Engineering - UNAM, Mexico

IAC-19.E1.3.7
CROSS-TRAINING SCHEME FOR AN ACTIVE LEARNING PROGRAM ON SPACE TRIALS IN THE SPACE EDUCATION PROGRAM OF THE TOKYO UNIVERSITY OF SCIENCE
Shinichi Kimura, Tokyo University of Science, Japan

IAC-19.E1.3.8
FROM STRATOSPHERIC EXPERIMENTS TO CUBESAT DEVELOPMENT: LESSONS LEARNED FROM THE S5LAB PARTICIPATION INTO ESA HANDS-ON EDUCATIONAL PROGRAMMES
Paolo Marzioli, Sapienza University of Rome, Italy

IAC-19.E1.3.9
EARLY ASSESSMENT OF THE `CANADIAN REDUCED GRAVITY EXPERIMENT DESIGN CHALLENGE': EXAMINING THE IMPACT OF CANADA'S FIRST MICROGRAVITY RESEARCH COMPETITION FOR STUDENTS
Aaron H. Persad, Massachusetts Institute of Technology (MIT), United States

IAC-19.E1.3.10
THE STUDENT AEROSPACE CHALLENGE, A UNIQUE CONTEST AND TERTIARY EDUCATIONAL PROGRAMME IN EUROPE
Philippe Coué, Dassault Aviation, France

IAC-19.E1.3.11
THE APUS SUPERNOVA SEARCH PROGRAM: A SCIENTIFIC LEADERSHIP AND RESEARCH OPPORTUNITY FOR GRADUATE AND UNDERGRADUATE STUDENTS.
Kristen Miller, American Public University System, United States

IAC-19.E1.3.12
SUMMER OF CODE: BRINGING TOGETHER STUDENTS WITH OPEN-SOURCE SPACE ORGANIZATIONS
Andreas Hornig, University of Stuttgart, Germany

E1.4. In Orbit - Postgraduate Space Education

October 23 2019, 09:45 — 144C

Co-Chair(s): David B. Spencer, The Pennsylvania State University, United States; Camille Alleyne, NASA, United States;
Rapporteur(s): Carol Carnett, International Space University (ISU), United States; Remco Timmermans, International Space University (ISU), United Kingdom;

IAC-19.E1.4.1
KEYNOTE: EXPERIENCE AND FINDINGS BY KYUSHU INSTITUTE OF TECHNOLOGY TO HAVE A SUCCESSFUL SPACE CAPACITY BUILDING PROGRAM
MENGU CHO, Kyushu Institute of Technology, Japan

IAC-19.E1.4.2
"SATELLITE TECHNOLOGY": AN INTERNATIONAL, INTERDISCIPLINARY MASTER PROGRAM WITH FOCUS ON HANDS-ON EXPERIENCES
Klaus Schilling, University Wuerzburg, Germany

IAC-19.E1.4.3
THE SUCCESSFUL EXPERIENCE OF INTERNATIONALMASTER PROGRAM ON SPACE TECHNOLOGY AND APPLICATION
YI Xiao Su, Beihang University (BUAA), China

IAC-19.E1.4.4
THE ITALIAN-KENYAN INTERNATIONAL POSTGRADUATE COURSE IN "CAPACITY BUILDING IN ASTRONAUTICS"
Fabio Santoni, Sapienza University of Rome, Italy

IAC-19.E1.4.5
POSTGRADUATE SPACE EDUCATION FOR MILITARY SPACE PROFESSIONALS: A CASE STUDY OF THE SCHRIEVER SCHOLARS SPACE CONCENTRATION
Brent Ziarnick, Air University, United States

IAC-19.E1.4.6
TUPPERSATS: THINKING INSIDE THE BOX FOR SPACE SYSTEMS ENGINEERING
David Murphy, University College Dublin (UCD), Ireland

IAC-19.E1.4.7
EVALUATION OF AN INTERDISCIPLINARY POSTGRADUATE EDUCATION PROGRAM ON SPACE ROBOTICS AND PLANETARY EXPLORATION TECHNOLOGIES WITHIN THE INSTITUTE OF SPACE SYSTEMS AT THE UNIVERSITY OF STUTTGART
Moritz Nitz, IRS, University of Stuttgart, Germany

IAC-19.E1.4.8
KUWAIT UNIVERSITY CUBESAT-1
Ghanim Alotaibi, Kuwait University, Kuwait

IAC-19.E1.4.9
10 YEARS IN SPACE LAW: LESSONS IN EDUCATING POST-DOCTORAL STUDENTS IN SPACE LAW
Elsbeth Magilton, University of Nebraska, College of Law, United States

IAC-19.E1.4.10
REPORT ON 7-YEARS' EXPERIENCE OF SATELLITE INSTRUMENT DEVELOPMENT PROJECT COURSE
Kikuko Miyata, Nagoya University, Japan

IAC-19.E1.4.11 (withdrawn)
11 YEARS OF HANDS-ON EXPERIENCE ON SPACE EDUCATION AT VIGO UNIVERSITY THROUGH 4 CUBESATS PROJECTS FOLLOWING SYSTEMS ENGINEERING ESA-ECSS STANDARDS
Fernando Aguado Agelet, University of Vigo, Spain

E1.5. Enabling the Future - Developing the Space Workforce

October 23 2019, 14:45 — 144C

Co-Chair(s): Michal Kunes, Czech Republic; Hubert Diez, CNES, France;
Rapporteur(s): Kathleen Coderre, Lockheed Martin Corporation, United States; Olga Zhdanovich, Modis for European Space Agency, The Netherlands;

IAC-19.E1.5.1
WORKFORCE FOR THE FUTURE DEVELOPMENT OF SPACE ACCESS VEHICLES
Steven Dunn, Jacobs, United States

IAC-19.E1.5.2
PUBLIC AND PRIVATE SPACE WORKING ENVIRONMENTS IN ITALY – NEW PROGRESSES AND INTERNATIONAL COMPARISONS IN THE "INCLUSIVENESS ORIENTED" EDUCATION AND OUTREACH SYSTEM PROPOSE A MODEL OF WORKFORCE WELLNESS AND ORGANISATIONAL EFFICIENCY
Giacomo Primo Sciortino, Italian Space Agency (ASI), Italy

IAC-19.E1.5.3
REVOLUTIONARY AEROSPACE SYSTEMS CONCEPTS ACADEMIC LINKAGE (RASC-AL) CHALLENGE
Carol Galica, NASA Headquarters, United States

IAC-19.E1.5.4
EDUCATIONAL INTERNSHIPS AT NASA'S GODDARD SPACE FLIGHT CENTER
Harry Shaw, NASA GSFC, United States

IAC-19.E1.5.5
THE GEOTECH INNOVATION PROGRAM
Fatima AlAydaroos, UAE Space Agency, United Arab Emirates

IAC-19.E1.5.6
TESTS IN ORBIT AND DREAMKIT PROGRAMS IN THE UNITED ARAB EMIRATES – INNOVATIVE DUAL APPROACH TO ENABLE AND INSPIRE LEARNERS TO REACH FOR THE STARS
Carie Lemack, DreamUp, PBC, United States

IAC-19.E1.5.7
BUILDING THE AFRICA WE WANT: THE ROLE OF SPACE GENERATION WORKSHOPS & YOUTH IN DEVELOPING THE SPACE SECTOR IN AFRICA
Hansley Noruthun, Space Generation Advisory Council (SGAC), Mauritius

IAC-19.E1.5.8
PROMOTING THE DEVELOPMENT OF YOUNG SPACE PROFESSIONALS ON HARWELL CAMPUS
Ana Raposo, Space Generation Advisory Council (SGAC), United Kingdom

IAC-19.E1.5.9
TECSPACE: A STUDENT RUN ORGANIZATIONAL MODEL FOR UNIVERSITIES THAT LACK AN AEROSPACE ENGINEERING FACULTY OR ACADEMIC DEGREE IN DEVELOPING COUNTRIES.
Carlos Rodríguez, Instituto Tecnológico de Costa Rica (TEC), Costa Rica

IAC-19.E1.5.10
NASA'S DIVERSE AND INNOVATIVE APPROACHES TO BUILDING CAPACITY IN THE FUTURE STEM WORKFORCE
Amanda Clayton, NASA DEVELOP National Program, United States

IAC-19.E1.5.11
PROGRESS IN THE FORMATION OF PROFESSIONALS WITH KNOWLEDGE IN AEROSPACE TECHNOLOGY IN PERU: AN OVERVIEW
Avid Roman-Gonzalez, Image Processing Research Laboratory (INTI-Lab). Universidad de Ciencias y Humanidades - UCH, Peru

IAC-19.E1.5.12
RESPONDING TO EMERGING NEEDS IN SPACE AND NON-SPACE TRADES: EDUCATION BEYOND TRADITIONAL METHODS TO TRAIN FUTURE WORKFORCE AND THEIR EMPLOYERS.
Olga Bannova, University of Houston, United States

E1.6. Calling Planet Earth - Space Outreach to the General Public

October 24 2019, 09:45 — 144C

Co-Chair(s): Jessica Culler, NASA Ames Research Center, United States; Nelly Ben Hayoun, Royal Holloway, University of London, United Kingdom;
Rapporteur(s): Remco Timmermans, International Space University (ISU), United Kingdom; Frank Friedlaender, Lockheed Martin Space Systems Company, United States;

IAC-19.E1.6.1
WALK TO MARS: OUR PATH TO THE RED PLANET
Jonathon Hill, Arizona State University, United States

IAC-19.E1.6.2
CHALLENGES AND SUCCESSES OF STEM ENGAGEMENT OF APOLLO 50TH ANNIVERSARY EVENTS FOR A POST-APOLLO AUDIENCE
Barrett Caldwell, Purdue University, United States

IAC-19.E1.6.3
THE NATIONAL SPACE PROGRAM, THE MOST EFFICIENT OUTREACH PROGRAM ITSELF: CASE OF KOREAN ASTRONAUT PROGRAM
Seungmi Chung, Virginia Polytechnic Institute and State University, Korea, Republic of

IAC-19.E1.6.4 (withdrawn)
WHAT DOES GOD NEED WITH A STARSHIP? EVANGELICAL CHRISTIANS AND SUPPORT FOR OUTER SPACE EXPLORATION.
Andrea Molle, Chapman University, United States

IAC-19.E1.6.5
EXTREME EXPLORATION AND OUTREACH: PLUTO AND ULTIMA THULE
Kerri Beisser, The John Hopkins University Applied Physics Laboratory, United States

IAC-19.E1.6.6
BUILDING FOUNDATIONS FOR INTERNATIONAL COLLABORATION THROUGH EDUCATIONAL OUTREACH INITIATIVES
Carlos Fontanot, NASA, United States

IAC-19.E1.6.7
TAKING SPACE CAFE GLOBAL
Danielle DeLatte, Japan

IAC-19.E1.6.8
SPACE FOR YOUTH -ACTIVITIES OF THE UNITED NATIONS OFFICE FOR OUTER SPACE AFFAIRS-
Ayami Kojima, United Nations Office for Outer Space Affairs, Austria

IAC-19.E1.6.9
PUBLIC ENGAGEMENT STRATEGIES FOR GLOBAL PROJECTS OF THE INTERNATIONAL ASTRONOMICAL UNION'S 100TH ANNIVERSARY CELEBRATIONS (IAU100)
Bethany Downer, Leiden University, Canada

IAC-19.E1.6.10
DOES SPACE REALLY INSPIRE AND CHANGE PERSPECTIVES? A RANDOMIZED CONTROLLED STUDY OF SECONDARY SCHOOL STUDENTS TO ASSESS THE IMPACT OF THE 'PALE BLUE DOT' PERSPECTIVE
Ramasamy Venugopal, International Astronomical Union (IAU), South Africa

IAC-19.E1.6.11 (withdrawn)
NASA PUBLIC OPINION AND THE FEDERAL BUDGET: ASTRONOMICAL EVENTS CAN SPARKING PUBLIC INTEREST IN SPACE.
Layla Bryant, United States

IAC-19.E1.6.12
THE "X FACTOR", EVALUATING THE IMPACT OF ESA'S COMMUNICATIONS IN THE NEW SPACE AGE
Philippe Willekens, European Space Agency (ESA), France

IAC-19.E1.6.13
SPACE OUTREACH: WHY DO WE DO IT? DOES IT WORK? AND HOW DO WE DO IT BETTER?
Jessica Culler, NASA Ames Research Center, United States

E1.7. New Worlds - Non-Traditional Space Education and Outreach

October 24 2019, 14:45 — 144C

Co-Chair(s): Vera Mayorova, Bauman Moscow State Technical University, Russian Federation; Olga Zhdanovich, Modis for European Space Agency, The Netherlands;
Rapporteur(s): Carol Christian, STScI, United States; Kaori Sasaki, JAXA, Japan;

IAC-19.E1.7.1
EFFECTIVE ENGAGEMENT STRATEGIES FOR UNDERSERVED MINORITIES AND RURAL REGIONS: A CASE STUDY IN NEWFOUNDLAND, CANADA
Bethany Downer, Leiden University, Canada

IAC-19.E1.7.2
HOLOGLOBE AUGMENTED REALITY FOR ICESAT-2 MISSION OUTREACH
Valerie Anne Casasanto, NASA Goddard/University of Maryland, Baltimore County (UMBC), United States

IAC-19.E1.7.3
ENGAGING THE FIVE SENSES IN SPACE THROUGH ARIZONA STATE UNIVERSITY'S INTERPLANETARY INITIATIVE
Tanya Harrison, Arizona State University, United States

IAC-19.E1.7.4
ESA_LAB DEMONSTRATOR PROJECT: IGLUNA
Tatiana Benavides, Swiss Space Center, Switzerland

IAC-19.E1.7.5
LANGUAGE CARDS FOR NASA'S JAMES WEBB SPACE TELESCOPE
Peter Sooy, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States

IAC-19.E1.7.6 (withdrawn)
INSTAGRAM IN SPACE AND HOW ENGAGING THE PUBLIC THROUGH SOCIAL MEDIA IS ESSENTIAL TO NEW SPACE
Mclee Kerolle, Space Generation Advisory Council (SGAC), United States

IAC-19.E1.7.7
TEKNOFEST ISTANBUL AEROSPACE AND TECHNOLOGY FESTIVAL AND ITS KEY ROLE IN REALIZING "NATIONAL TECHNOLOGY INITIATIVE"
Halit Mirahmetoglu, National Defense University, Hezârfen Aeronautics and Space Technologies Institute, Turkey

IAC-19.E1.7.8
SPACE SCIENCE INSTRUCTION ABOVE THE ARCTIC CIRCLE. A MODEL FOR REMOTE AREAS.
Phyllis Friello, Space Center Houston, United States

IAC-19.E1.7.9
PLANET WATCH: RUSSIAN NATIONWIDE AEROSPACE EDUCATION PROGRAM
Antonina Gromyko, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.E1.7.10
UTILIZING SUBORBITAL SPACE FOR EXPANDING PUBLIC AWARENESS THROUGH SENDING PERSONALIZED ITEMS TO SPACE
Hamed Gamal, Czech Republic

IAC-19.E1.7.11
MEASURING THE IMPACT OF SPACE DATA ON SOCIAL ISSUES
Jeanne Holm, United States

IAC-19.E1.7.12
THE POSSUM 13: HONORING THE MERCURY 13, FEMALE POSSUM SCIENTIST-ASTRONAUT CANDIDATE AMBASSADORS CREATE STEM OPPORTUNITY AND REPRESENTATION FOR YOUNG STUDENTS
Yvette Marie Gonzalez, Moon Village Association (MVA), United States

IAC-19.E1.7.13 (withdrawn)
THE MOST EMPOWERING FORM OF SCIENCE ENGAGEMENT: PLAY
Ariel Waldman, United States

E1.8. Hands-on Space Education and Outreach

October 25 2019, 09:45 — ISZ

Co-Chair(s): Lyn Wigbels, University Corporation for Atmospheric Research, United States; Valerie Anne Casasanto, NASA Goddard/ University of Maryland, Baltimore County (UMBC), United States;
Rapporteur(s): Carol Carnett, International Space University (ISU), United States; Kevin Stube, The Planetary Society, United States;

IAC-19.E1.8.1
MODEL BASED SYSTEMS ENGINEERING EDUCATION WITH HANDS-ON ACTIVITIES USING CUBESAT KIT
Masahiko Yamazaki, Nihon University, Japan

IAC-19.E1.8.2 (withdrawn)
FUNCUBE, A LOW-COST SYSTEM TO TEACH ABOUT INTEGRATION AND TESTING PHASE
Sajjad Ghazanfarinia, Iran

IAC-19.E1.8.3
A SPACE EXPEDITION FOR EARLY ELEMENTARY AND PRESCHOOL
Laila Dragvik, NAROM - Norwegian Centre for Space-Related Education, Norway

IAC-19.E1.8.4
IMPLEMENTATION OF A SATELLITE OPERATIONS STUDENT PROJECT IN THE MULTI-MISSION CONTEXT AT TU BERLIN
Tony Erdmann, Technische Universität Berlin, Germany

IAC-19.E1.8.5
PRECIPITATION EDUCATION: SHARING THE EXCITEMENT OF THE GLOBAL PRECIPITATION MEASUREMENT MISSION WITH MULTIPLE AUDIENCES
Dorian Janney, ADNET Systems, Inc., United States

IAC-19.E1.8.6
THE GLOBE ZIKA EDUCATION AND PREVENTION PROJECT
Kristin Wegner, The GLOBE Program, United States

IAC-19.E1.8.7
ICESAT-2 AND THE TREES AROUND THE GLOBE STUDENT RESEARCH CAMPAIGN: LOOKING AT EARTH'S HEIGHT, ONE TREE AT A TIME
Brian Campbell, National Aeronautics and Space Administration (NASA), United States

IAC-19.E1.8.8
KEYNOTE: NASA SCIENCE ACTIVATION
Kristen Erickson, NASA, United States

E1.9. Space Culture – Public Engagement in Space through Culture

October 25 2019, 13:30 — 144C

Co-Chair(s): Nelly Ben Hayoun, Royal Holloway, University of London, United Kingdom; Mike Garrett, University of Manchester, United Kingdom;
Rapporteur(s): Carol Oliver, University of New South Wales, Australia; Nahum Romero, KOSMICA, Germany;

IAC-19.E1.9.1
MYTHS OF THE COSMOS: ALTERNATIVE INDIGENOUS NARRATIVES FOR SPACE EXPLORATION
Prathima Muniyappa, Massachusetts Institute of Technology (MIT), United States

IAC-19.E1.9.2
ENABLING EFFECTIVE CROSS-INDUSTRY COLLABORATION, FOSTERING INNOVATION AND EDUCATIONAL ENGAGEMENT THROUGH NON-TRADITIONAL INITIATIVES
Nancy C. Wolfson, Disrupting Space LLC, United States

IAC-19.E1.9.3
CURATING FOR THE CURIOUS: SPACE MUSEUMS IN THE 21ST CENTURY
Wael Bazzi, Belgium

IAC-19.E1.9.4
BEYOND THE MISSION: EXPLORING HOW HUMAN CULTURE WILL EVOLVE IN SPACE
Sands Fish, Massachusetts Institute of Technology (MIT), United States

IAC-19.E1.9.5 (withdrawn)
INITIATIVE FOR PROMOTING THE SPACE EDUCATION, AWARENESS AND TRAINING IN PAKISTAN – A CASE STUDY
Anwar Ali, Pakistan Space and Upper Atmosphere Research Commission, Pakistan

IAC-19.E1.9.6 (withdrawn)
PUBLIC ENGAGEMENT IN SPACE WITH THE MOON VILLAGE ASSOCIATION: A CRITICAL REVIEW OF EFFORTS GLOBALLY AND IN THE UK
Paul Iliffe, Moon Village Association (MVA), United Kingdom

IAC-19.E1.9.7
ENHANCING CULTURAL EXCHANGE THROUGH FOOD IN SPACE
Maggie Coblentz, Massachusetts Institute of Technology (MIT), United States

IAC-19.E1.9.8 (non-confirmed)
MEMORIES OF THE MOON AGE. MANKIND'S DREAM OF FLYING TO THE MOON BETWEEN SCIENCE AND FICTION
Lukas Feireiss, Germany

IAC-19.E1.9.9
SPACE CULTURES AND SPACE IMAGINARIES IN MEXICO: ANTHROPOLOGICAL DIALOGUES WITH THE MEXICAN SPACE AGENCY
Anne Johnson, Mexico

IAC-19.E1.9.10
POWERS OF EDUCATION AND OUTREACH IN PROMOTING SPACE SCIENCES IN THE DEVELOPING COUNTRIES
ABUBAKAR BABAGANA, SEABED INTERNATIONAL, Nigeria

IAC-19.E1.9.11
ROLE OF COMPETITIONS IN PROMOTING SPACE: EU - JAPAN NEWSPACE2060 POETRY MANGA COMPETITION
Helen Tung, Moon Village Association (MVA), United Arab Emirates

IAC-19.E1.9.12
THE FINNISH ASTRONAUTICAL SOCIETY 60TH ANNIVERSARY CELEBRATIONS
Axel Straschnoy, Suomen Avaruustutkimusseura - Finnish Astronautical Society, Finland

IAC-19.E1.9.13 (withdrawn)
SPACE OUTREACH AND EDUCATION: THE KEY ROLE OF STUDENT ASSOCIATIONS.
Francesco di Lauro, EUROAVIA, Italy

IAC-19.E1.9.14
RE-IMAGINING OUTER SPACE
Joseph Popper, Switzerland

IAC-19.E1.9.15
OUTER SPACE AND POPULAR CULTURE: UNTAPPED POTENTIAL FOR SPACE EDUCATION AND OUTREACH
Annette Froehlich, LL.M., MAS, European Space Policy Institute (ESPI)German Aerospace Center (DLR), Austria

E1.IP. Interactive Presentations - IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Lisa Antoniadis, Astrocast SA, Switzerland; Kevin Stube, The Planetary Society, United States;
Rapporteur(s): Jessica Culler, NASA Ames Research Center, United States; Seyed Ali Nasseri, Space Generation Advisory Council (SGAC), Canada;

IAC-19.E1.IP.1
THE PROJECT MARS COMPETITION: ENGAGING THE PUBLIC IN SPACE
Jancy McPhee, The Aerospace Corporation, United States

IAC-19.E1.IP.2
PREPARING STUDENTS FOR THE INTERNATIONAL NEW SPACE ECONOMY
Nathaniel Woodford, United States

IAC-19.E1.IP.3
NEW METHODOLOGIES TO ENCOURAGE THE INTEREST OF CHILDREN FROM EMERGING COUNTRIES FOR THE EXACT SCIENCES AND ENGINEERING
Viviana Garzón Cardozo, Colombia

IAC-19.E1.IP.4
CAPACITY BUILDING FOR NEWSPACE AFRICA IN SPACE SCIENCE AND TECHNOLOGY: DEVELOPING THE YOUTHS FOR THE FUTURE OF AFRICAN SPACE
Abraham Akinwale, Space Generation Advisory Council (SGAC), Nigeria

IAC-19.E1.IP.5
TRAINING THE NEXT-GENERATION SPACE INDUSTRY WORKFORCE IN SATELLITE DESIGN AND MANUFACTURING
Carlos Niederstrasser, Northrop Grumman Corporation, United States

IAC-19.E1.IP.6 (withdrawn)
CUBESATS AS A FRAMEWORK FOR MULTIDISCIPLINARY CAPSTONE DESIGN PROJECTS
Matthew Cross, University of Western Ontario (UWO), Canada

IAC-19.E1.IP.7
SPACE SCIENCE AND TECHNOLOGY:THE FUTURE OF GIRLS/ WOMEN IN AFRICA
Chidinma Iroka Joy, National Space Research and Development Agency (NASRDA), Abuja Nigeria, Nigeria

IAC-19.E1.IP.8
COMPLETE DEVELOPMENT AND TESTING OF LAB-SCALE HYBRID ROCKET MOTORS BY UNDERGRADUATE STUDENTS
Rene Gonçalves, Instituto Tecnológico de Aeronáutica (ITA), Brazil

IAC-19.E1.IP.9 (withdrawn)
CREATIVE SPECULATION
Roy Wasson Valle, Arizona State University, United States

IAC-19.E1.IP.10
SPACE TECHNOLOGY BASED PROJECTS TO IMPROVE STEM/ STEAM EDUCATION FROM AN EMERGING ECONOMY PERSPECTIVE, THE CASE OF PARAGUAY.
Alejandro J. Roman Molinas, Paraguayan Space Agency, Paraguay

IAC-19.E1.IP.11
VIRTUAL REALITY TECHNOLOGY AS AN EFFICIENT INSTRUMENT OF SPACE EDUCATION AND OUTREACH.
Denis Nechvola, State Enterprise M.K. Yangel "Yuzhnoye" Design Office, Ukraine

IAC-19.E1.IP.12
FROM SPACEFLIGHT HARDWARE TO UNIVERSITY STUDENT DESIGNS: HOW IMPLEMENTATION OF NASA METHODOLOGIES AND PROCESSES ENSURE PROJECT SUCCESS IRRESPECTIVE OF SCALE
Ruth May, University of Alabama in Huntsville, United States

IAC-19.E1.IP.13 (withdrawn)
NASA GODDARD SPACE FLIGHT CENTER'S OPTIMUS PRIME SPINOFF PROMOTION AND RESEARCH CHALLENGE (OPSPARC) – WILL YOU BE THE SPARK?
Erin Majerowicz, NASA Goddard Space Flight Center Greenbelt MD 20771, United States

IAC-19.E1.IP.14
BUILDING AN EDUCATIONAL CUBESAT TRACKING NETWORK IN AUSTRALIA
Mike Thompson, Australia

IAC-19.E1.IP.15
SPACE EDUCATION IN NEPAL: TRANSITION FROM CANSAT TO NEPAL-PQ1, NEPAL'S FIRST PICO-SATELLITE
Jiten Thapa, ORION Space, Nepal

IAC-19.E1.IP.16 (non-confirmed)
SPACE CONNECT
Farah Hanum Mohd Fadzil, Universiti Sains Malaysia, Malaysia

IAC-19.E1.IP.17
YOUNG PROFESSIONALS IN THE UAE SPACE SECTOR
Maitha Al Romaithi, UAE Space Agency, United Arab Emirates

IAC-19.E1.IP.18
THE LATIN-AMERICAN SPACE WORKFORCE DEVELOPMENT AND THE CONTRIBUTION OF THE ANDEAN ROAD COUNTRIES FOR SCIENCE AND TECHNOLOGY TO THE REGION.
Marco Cabero, Beihang University, China

IAC-19.E1.IP.19
THE EFFECTIVENESS OF INNOVATIVE INTERNSHIP OPPORTUNITIES.
Salama Almansoori, UAE Space Agency, United Arab Emirates

IAC-19.E1.IP.20 (withdrawn)
DIVERSITY AS A GROWING PRIORITY IN THE EUROPEAN SPACE SECTOR: CHALLENGES AND OPPORTUNITIES
Ersilia Vaudo, ESA - European Space Agency, France

IAC-19.E1.IP.21
PRACTICAL INTRODUCTION TO AEROSPACE ENGINEERING THROUGH AMATEUR ROCKETRY
Charles-Frédérick Gauthier, Université de Sherbrooke, Canada

IAC-19.E1.IP.22 (non-confirmed)
STRATEGIC PLAN FOR WOMEN SPACE AND STEM EDUCATION IN GHANA.
Ernest Teye Matey, Ghana

IAC-19.E1.IP.23
CANADA'S FIRST AND ONLY UNDERGRADUATE PARABOLIC FLIGHT CAMPAIGN
Roxanne Fournier, University of Toronto, Canada

IAC-19.E1.IP.24
THE EDUCATIONAL PLATFORM SOURCE - A CUBESAT MISSION ON DEMISE INVESTIGATION USING IN-SITU HEAT FLUX MEASUREMENTS
Daniel Galla, IRS, University of Stuttgart, Germany

IAC-19.E1.IP.25
TSAT 5: MAKING CUBESATS ACCESSIBLE TO THE PUBLIC VIA A WEB AND AMATEUR RADIO BASED SATELLITE USER INTERFACE.
Sanjay Abraham, University of Manitoba, Canada

IAC-19.E1.IP.26
A HISTORY OF UMSATS: NEARING 10 YEARS OF STUDENT SATELLITE DESIGN SUCCESS
Matthew Driedger, University of Manitoba, Canada

IAC-19.E1.IP.27
PRE - FEASIBILITY EVALUATION FOR THE IMPLEMENTATION OF A SPACE STUDIES PROGRAM FOR MANAGEMENT STUDENTS IN SOUTH AMERICA
Nicole Villanueva Justino, Pontifical Catholic University of Peru, Peru

IAC-19.E1.IP.28 (withdrawn)
A WEB-BASED, INTERACTIVE MODEL OF AN OFF-WORLD, HUMAN COMMUNITY.
Kai Staats, Arizona State University, United States

IAC-19.E1.IP.29
EXPERIENCES FROM THE FIRST GRADUATE PROGRAM ON SPACE TECHNOLOGY IN THE UNITED ARAB EMIRATES
Prashanth Marpu, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-19.E1.IP.30
ONLINE TOOLS FOR WORKFORCE TRAINING - STATUS QUO AND BEST PRACTICES
Bernd Weiss, International Space University, Germany

IAC-19.E1.IP.31 (withdrawn)
INDIGENOUS KNOWLEDGE: BRIDGING EARTH AND SPACE SCIENCE
Cynthia Schmidt, NASA, United States

IAC-19.E1.IP.32
THE OUT ASTRONAUT PROJECT: EMPLOYING THE INSPIRATIONAL POWER OF ASTRONAUTICS TO EMPOWER THE LGBTQ COMMUNITY IN SCIENCE AND SPACE.
Yvette Marie Gonzalez, Moon Village Association (MVA), United States

IAC-19.E1.IP.33
NASA'S INTERNATIONAL SPACE APPS CHALLENGE: 6 YEARS OF GLOBAL HACKATHON WEEKENDS FOR INNOVATION INCUBATION FROM THE LOCAL PERSPECTIVE OF STUTTGART, GERMANY
Andreas Hornig, University of Stuttgart, Germany

IAC-19.E1.IP.34 (non-confirmed)
MESSAGING ON THE HUMAN CONDITION AS SPACE RESIDENTS
Joshua Burstein, United States

E2. 47th STUDENT CONFERENCE

Coordinator(s): Marco Schmidt, Bochum University of Applied Sciences, Germany; Franco Bernelli-Zazzera, Politecnico di Milano, Italy;

E2.1. Student Conference - Part 1

October 22 2019, 09:45 — 140B

Co-Chair(s): Franco Bernelli-Zazzera, Politecnico di Milano, Italy; Benedicte Escudier, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France;
Rapporteur(s): Jeong-Won Lee, Korea Aerospace Research Institute (KARI), Korea, Republic of;

IAC-19.E2.1.1
FAST STAR TRACKER HARDWARE IMPLEMENTATION ON A FPGA DEVICE.
Chris von Wielligh, Stellenbosch University, South Africa

IAC-19.E2.1.2
STUDY AND ANALYSIS OF MEMS-BASED MICROVALVE FOR PROPULSION SYSTEMS
Shrutika Agarwal, TU Delft, The Netherlands

IAC-19.E2.1.3
DESIGN AND THERMAL ANALYSIS OF A SOLAR THERMAL MICROTHRUSTER FOR A LUNAR MISSION
Krishti Das, Delft University of Technology, The Netherlands, The Netherlands

IAC-19.E2.1.4
A FUEL-FREE AND AGILE ATTITUDE MANEUVER OF SPACE MEMBRANE STRUCTURES USING ELECTROMAGNETIC FORCE IN LEO
Yuki Yamada, Nagoya University, Japan

IAC-19.E2.1.5
VARIATION OF A ROCKET'S ENGINE THRUST RELATIVE TO EXTERNAL PRESSURE
Nicolás de Jong, LEEM-UPM, Spain

IAC-19.E2.1.6
DESIGN OF LOW ENERGY ESCAPE TRAJECTORY AND DELTA V REDUCTION
Yu Tanaka, Waseda University, Japan

IAC-19.E2.1.7
IMPLEMENTATION OF DYNAMIC ROUTING ALGORITHM FOR SPACE NETWORKING USING COTS OBCS
Abdelrahman Metwally, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.E2.1.8
INTEGRATED EXPERIMENTAL CAMPAIGN TO VALIDATE NUMERICAL MODAL ANALYSIS ON A FUSED DEPOSITION MODELLING CUBESAT PRIMARY STRUCTURE: A SMART TEST METHODOLOGY FOR INCREASING STUDENTS LEARNING CAPABILITIES
Davide Pederbelli, Politecnico di Torino, Italy

IAC-19.E2.1.9
NAVIGATION GUIDANCE AND CONTROL ALGORITHMS VALIDATION OF RENDEZVOUS AND DOCKING USING ROBOTIC MANIPULATORS
Harika Pothina, Indian Space Research Organization (ISRO), India

IAC-19.E2.1.10 (withdrawn)
DESIGN, MANUFACTURING AND FLIGHT TEST OF CUSTOM MODEL ROCKET
Michal Málek, Czech Technical University In Prague (CTU), Czech Republic

IAC-19.E2.1.11
ALTERNATIVE CONCEPT FOR ENERGY PRODUCTION AT LUNAR POLES USING THERMOELECTRIC GENERATORS
Neelesh Ranjan Saxena, TU Berlin, Germany

IAC-19.E2.1.12
COOLING SOLUTIONS FOR EMBEDDED SYSTEM
Ophelia LOPES MARQUES, École Nationale Supérieure de Mécanique et d'Aérotechnique (ISAE-ENSMA Poitiers), France

E2.2. Student Conference - Part 2

October 22 2019, 14:45 — 140B

Co-Chair(s): Marco Schmidt, Bochum University of Applied Sciences, Germany; Frank Friedlaender, Lockheed Martin Space Systems Company, United States;
Rapporteur(s): Emmanuel Zenou, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France;

IAC-19.E2.2.1
DESIGN OF SCALABLE HYBRID ROCKET MOTOR FOR SPACE PROPULSION APPLICATIONS
Pau Molas-Roca, Luleå University of Technology, Sweden

IAC-19.E2.2.2
ROBUST ATTITUDE CONTROL FOR FLEXIBLE SATELLITE WITH MULTIPLE UNCERTAINTIES AND ACTUATOR SATURATIONS
Liming Fan, School of Astronautics, Beihang University, China

IAC-19.E2.2.3
APPLICATION OF TOPOLOGY AND SIZE OPTIMIZATION FOR A MICRO-SATELLITE STRUCTURE DESIGN
Xurui Zhao, Beihang University (BUAA), China

IAC-19.E2.2.4
INTERNATIONAL LEGAL LIMITATIONS AND CONTEMPORARY ISSUES FOR SPACE RESOURCE UTILISATION IN EMERGING STATES AND DEVELOPING NATIONS
Ruvimbo Samanga, Space Generation Advisory Council (SGAC), South Africa

IAC-19.E2.2.5
IN THE INTERESTS OF ALL COUNTRIES – ENSURING EQUITABLE ACCESS TO SPACE RESOURCES
Thomas Cheney, Northumbria University, United Kingdom

IAC-19.E2.2.6
INVESTIGATING THE FEASIBILITY AND DESIGN OF A MICROGRAVITY SURGICAL WORKSTATION
Eleonor Frost, University College London (UCL), United Kingdom

IAC-19.E2.2.7
MDRS CREW 206'S SLEEP ANALYSIS WITH DREEM: INFLUENCE OF THE MISSION AND THE EVAS ON SLEEP QUALITY
Norbert Pouzin, ISAE-Supaero University of Toulouse, France

IAC-19.E2.2.8
PASSIVE THERMAL CONTROL BY INTEGRATION OF PHASE CHANGE MATERIAL INTO ADDITIVELY MANUFACTURED STRUCTURES
Martin Reiswich, FH Aachen University of Applied Sciences, Germany

IAC-19.E2.2.9
DESIGN AND TESTING OF A FAULT-TOLERANT SPACE SUIT
Johnie Sublett, Georgia Institute of Technology, United States

E2.3-GTS.4. Student Team Competition

October 23 2019, 09:45 — 147B

Co-Chair(s): Andrea Jaime, OHB System AG - Munich, Germany; Emmanuel Zenou, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France;
Rapporteur(s): Kathleen Coderre, Lockheed Martin Corporation, United States;

IAC-19.E2.3-GTS.4.1
MARS HELICOPTER 2.0: SURVEYING THE RED PLANET FOR FUTURE HUMAN AND ROBOTIC EXPLORERS
Benjamin Donitz, University of Michigan, United States

IAC-19.E2.3-GTS.4.2
EXPERIMENT RESULTS AND POST-FLIGHT ANALYSIS OF THE ISS STUDENT EXPERIMENT PAPELL
Manfred Ehresmann, Institute of Space Systems, Universität Stuttgart, Germany

IAC-19.E2.3-GTS.4.3
IN SITU MARTIAN ADDITIVE MANUFACTURING
Jacob Florian, University of Michigan, Ann Arbor, United States

IAC-19.E2.3-GTS.4.4
DESIGN AND COMPARATIVE ANALYSIS OF NOVEL TECHNIQUES FOR REACTION WHEEL TORQUE CONTROL IN ACCORDANCE WITH ATTITUDE CONTROL LAW OF SATELLITE
Ajinkya Phanse, College Of Engineering, Pune, India

IAC-19.E2.3-GTS.4.5
ORPHEUS: A NOVEL APPROACH TO LUNAR SURFACE ACCESS UTILIZING THE NASA LUNAR GATEWAY
Eric Magliarditi, Massachusetts Institute of Technology (MIT), United States

IAC-19.E2.3-GTS.4.6
MICROMETEOROID IMPACT DETECTION AND SUPPRESSION FOR ISS EVAS
Katherine Carroll, SEDS, United States

IAC-19.E2.3-GTS.4.7
CRATOS: A CIS-LUNAR REUSABLE SEMI-AUTONOMOUS TRANSPORT OPERATION SYSTEM
Conrad Herold Wright, Embry-Riddle Astronautical University, United States

IAC-19.E2.3-GTS.4.8
DEVELOPING AND TESTING CUBESAT SUBSYSTEMS TOWARDS CREATION OF A UNIVERSITY CUBESAT BUS
José Manuel Diez, Technische Universität Berlin, Germany

IAC-19.E2.3-GTS.4.9
DESIGN OF ATTITUDE DETERMINATION AND CONTROL SYSTEM FOR AUTONOMOUS DOCKING OF SMALL SATELLITES
Gokull Subramanian, SRM University, kattankulathur, chennai, INDIA, India

IAC-19.E2.3-GTS.4.10
AIMIS - ADDITIVE MANUFACTURING IN SPACE BY EXTRUSION OF UV-CURABLE POLYMER RESIN
Alexander Titz, Munich University of Applied Sciences, Germany

E2.4. Educational Pico and Nano Satellites

October 23 2019, 14:45 — 140B

Co-Chair(s): Xiaozhou Yu, Northwestern Polytechnical University, China; Franco Bernelli-Zazzera, Politecnico di Milano, Italy;

IAC-19.E2.4.1
ANALYSIS OF OPTIMAL REACTION WHEEL CONFIGURATIONS FOR INTEGRATED THREE AXES CONTROL FOR ON-ORBIT SERVICING NANOSATELLITES
Divya Rao Ashok Kumar, Simon Fraser University, Canada

IAC-19.E2.4.2
HIGH SCHOOL TEAM DAVINCI LIGHTS UP MINDS AROUND THE WORLD
Elizabeth Brubaker, United States

IAC-19.E2.4.3
LESSONS LEARNED FROM AN UNDERGRADUATE UNIVERSITY'S FIRST CUBESAT
Ryan Loehrlein, Other, United States

IAC-19.E2.4.4
DYNAMIC ORBIT DETERMINATION OF LOW EARTH ORBIT CUBESAT
Danlei Chen, Western University, Canada

IAC-19.E2.4.5
DEVICE FOR PASSIVE CUBESATS DEORBITING
Vera Mayorova, Bauman Moscow State Technical University, Russian Federation

IAC-19.E2.4.6
DESIGN AND MANUFACTURING OF GALILEICUBESAT : A NANO-SATELLITE FOR HIGH SCHOOL AND UNIVERSITY HANDS-ON EDUCATION
Roberto Pastore, Sapienza University of Rome, Italy

IAC-19.E2.4.7
DESIGN AND TESTING OF A SOLAR PANEL DEPLOYMENT MECHANISM FOR A SOLAR SAILING NANOSATELLITE
Vaibhav Wanere, College of Engineering Pune, India

IAC-19.E2.4.8
DESIGN AND TESTING OF A SOLAR SAIL DEPLOYMENT UNIT FOR A SOLAR SAILING NANOSATELLITE
Rohit Patil, College of Engineering Pune, India

IAC-19.E2.4.9
ANALYSIS OF SOLAR SAILING AS A MEANS OF ORBIT MANEUVERING FOR NANOSATELLITES IN LOW EARTH ORBIT
Aditya Neralkar, College of Engineering Pune, India

IAC-19.E2.4.10
USING HARD DRIVE BASED REACTION WHEELS FOR ATTITUDE CONTROL ON THE TSAT5 CUBESAT
Matthew Driedger, University of Manitoba, Canada

IAC-19.E2.4.11
CUBEAR, A PROJECT TO TEACH ABOUT SATELLITE APPLICATIONS
Sajjad Ghazanfarinia, Iran

IAC-19.E2.4.12
TACKLING CONSTRAINTS AND RISKS IN AN ALL-STUDENT CUBESAT BUILD
Jorge Rodriguez, United States

E3. 32nd IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS

Coordinator(s): Jacques Masson, European Space Agency (ESA), The Netherlands; Bernhard Schmidt-Tedd, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

E3.1. International cooperation in using space for sustainable development: Towards a "Space2030" agenda

October 22 2019, 09:45 — 144A

Co-Chair(s): Isabelle Duvaux-Bechon, ESA - European Space Agency, France; Dumitru-Dorin Prunariu, Romanian Space Agency (ROSA), Romania;
Rapporteur(s): Alexander Soucek, Austrian Space Forum, Austria; Peter Stubbe, DLR (German Aerospace Center), Germany;

IAC-19.E3.1.1
FORGING PARTNERSHIPS AMONG USERS AND SPACE SOLUTION PROVIDERS
Hui Du, United Nations Office for Outer Space Affairs, Austria

IAC-19.E3.1.2
FROM DUBAI DECLARATION TO POST UNISPACE+50 RESOLUTION: UAE APPROACH TO FOSTER AND MEASURE SPACE ROLE AS DRIVER OF GLOBAL SOCIO-ECONOMIC DEVELOPMENT
Fatima AlShamsi, UAE Space Agency, United Arab Emirates

IAC-19.E3.1.3
PRIORITY ITEMS FOR THE UNITED NATIONS SPACE2030 AGENDA FROM THE PERSPECTIVE OF THE ECONOMIC SOUTH
Thien Nguyen, International Space University, Australia

IAC-19.E3.1.4
SPACE SUPPORTING SUSTAINABLE DEVELOPMENT IN AFRICA: VIEWS FROM THE CONTINENT
Annette Froehlich, LL.M., MAS, European Space Policy Institute (ESPI)German Aerospace Center (DLR), Austria

IAC-19.E3.1.5
INVENTORY OF COUNTRY SPACE CAPABILITIES: MAPPING HOW EACH NATION CAN CONTRIBUTE (IN ITS OWN WAY) TO A SPACE 2030 SUSTAINABLE DEVELOPMENT AGENDA
David Vaccaro, United States

IAC-19.E3.1.6
ESA AND THE ARCTIC - THE EUROPEAN SPACE AGENCY'S CONTRIBUTIONS TO A SUSTAINABLE ARCTIC
Ulrike M. Bohlmann, ESA, France

IAC-19.E3.1.7
COMPREHENSIVE CAPACITY BUILDING DERIVED FROM INTERNATIONAL COOPERATION ON REMOTE SENSING: CASE STUDY
MIJIN YOO, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.E3.1.8
MAPPING OF THE WORLDWIDE ACTIVITIES AND PARTNERSHIPS WITHIN THE SPACE GENERATION ADVISORY COUNCIL PROJECT GROUPS IN THE FRAME OF SUSTAINABLE DEVELOPMENT GOALS AND SPACE2030 AGENDA
Ciro Farinelli, Space Generation Advisory Council (SGAC), Germany

IAC-19.E3.1.9
EASAR: RUSSIAN PRIVATE INITIATIVE TO CONTRIBUTE TO SUSTAINABLE DEVELOPMENT
Elena Petrakova, Russian Federation

IAC-19.E3.1.10
BRINGING SPACE TO THE NON-SPACE COMMUNITY: TOWARD SUSTAINABILITY AND THE SPACE2030 AGENDA
Lauren Napier, Centre for a Spacefaring Civilization, United States

IAC-19.E3.1.11
CAPACITY BUILDING INITIATIVES: THE CONTRIBUTION OF THE ITALIAN SPACE AGENCY TO THE SUSTAINABLE DEVELOPMENT GOALS
Nunzia Maria Paradiso, ASI - Italian Space Agency, Italy

IAC-19.E3.1.12
THE ROLE OF EMERGING SPACE NATIONS IN SUPPORTING SUSTAINABLE DEVELOPMENT AND ECONOMIC GROWTH
Alyssa Frayling, PricewaterhouseCoopers Advisory, France

E3.2. 50 years after Apollo 11: The future of space exploration and innovation

October 23 2019, 09:45 — 144A

Co-Chair(s): Nicolas Peter, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Michael Simpson, Secure World Foundation, United States;
Rapporteur(s): Marc Haese, DLR, German Aerospace Center, Germany; Devanshu Ganatra, India;

IAC-19.E3.2.1
IN SEARCH OF SPACE LEADERSHIP
James Vedda, The Aerospace Corporation, United States

IAC-19.E3.2.2
UN(OOSA)'S ROLE IN OUTER SPACE ACTIVITIES OF THE FUTURE
Simonetta Di Pippo, United Nations Office for Outer Space Affairs, Austria

IAC-19.E3.2.3 (withdrawn)
A COMPARATIVE ANALYSIS OF NATIONAL SPACE AGENCY BUREAUCRATIC STRUCTURES
Josh Wolny, Secure World Foundation, United States

IAC-19.E3.2.4
HOW PUBLIC-PRIVATE COLLABORATION IS ENABLING NASA TO SHAPE THE FUTURE OF SPACE EXPLORATION AND INNOVATION THROUGH CHALLENGES AND PRIZE COMPETITIONS
Amy Kaminski, NASA, United States

IAC-19.E3.2.5
EVOLUTION OF THE INTERNATIONAL PARTNERSHIPS FOR THE FUTURE UTILIZATION OF LEO AND LUNAR EXPLORATION
Juergen Schlutz, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-19.E3.2.6
NEW SPACE ECONOMY DRIVERS AND INDICATORS
Silvia Ciccarelli, Italian Space Agency (ASI), Italy

IAC-19.E3.2.7
REALIZING THE MOON VILLAGE: PARTICIPATION OF EMERGING SPACE COUNTRIES
Ghanim Alotaibi, Space Generation Advisory Council (SGAC), Kuwait

IAC-19.E3.2.8
A PURPOSE ORIENTED INNOVATION POLICY FRAMEWORK FOR SPACE RESOURCES
Angeliki Kapoglou, University College London (UCL), United Kingdom

IAC-19.E3.2.9
THE VIABILITY OF THE SPACE SETTLEMENT NARRATIVE IN POLITICS
Aaron Oesterle, National Space Society, United States

IAC-19.E3.2.10
WOMEN IN EXPLORATION: LESSONS FROM THE PAST AS HUMANITY REACHES DEEP SPACE
Shanessa Jackson, National Aeronautics and Space Administration (NASA) / Stellar Solutions Inc, United States

E3.3. Space Economics from Apollo to Tomorrow

October 24 2019, 09:45 — 144A

Co-Chair(s): Henry Hertzfeld, Space Policy Institute, George Washington University, United States; Jean-Jacques Tortora, European Space Policy Institute (ESPI), Austria;
Rapporteur(s): Mahulena Hofmann, University of Luxembourg, Luxembourg ; Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States;

IAC-19.E3.3.1
COMMERCIAL SATELLITE COMMUNICATIONS CAPACITY TRENDS
Anton Dolgopolov, Bryce Space and Technology, United States

IAC-19.E3.3.2
UNDERSTANDING HIGH-THROUGHPUT SATELLITES: MARKET DISRUPTIONS, TECHNOLOGY, AND VALUE ANALYSIS
Fan Geng, Georgia Institute of Technology, United States

IAC-19.E3.3.3
SOCIO-ECONOMIC ASSESSMENT OF PUBLIC PROGRAMMES SUPPORTING SATCOM INNOVATION
Stéphanie Willekens, Euroconsult, France

IAC-19.E3.3.4
A DISCOVERY OF TAIWAN'S SPACE ECONOMY
Xavier L.W. Liao, Ghent University, Belgium

IAC-19.E3.3.5
A STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT) ANALYSIS OF CHINA'S COMMERCIAL SPACE SECTOR
Xueying Han, Science and Technology Policy Institute, United States

IAC-19.E3.3.6
DETERMINANTS AND IMPACTS OF SUSTAINABLE PUBLIC FUNDING INTO SPACE SCIENCE AND TECHNOLOGY IN LESSER DEVELOPED ECONOMIES: A CASE STUDY OF THE SQUARE KILOMETRE ARRAY IN SOUTH AFRICA AND THE AFRICAN COLOCATION PROGRAMME PARTNERS
Carla Sharpe, SKA South Africa, South Africa

IAC-19.E3.3.7
GIVE IT ALL OR GIVE ALL TOGETHER: COMPARATIVE CAPABILITIES IN SPACE
Scott Schneider, Australia

IAC-19.E3.3.8
MEASURING THE SOCIO ECONOMIC BENEFITS OF SPACE SCIENCE AND TECHNOLOGY INVESTMENTS: THE CASE FOR SOUTH AFRICA
Busisiwe Nkonki, Council for Scientific and Industrial Research (CSIR), South Africa

IAC-19.E3.3.9
THE ECONOMIC IMPACT ANALYSIS OF SATELLITE DEVELOPMENT AND ITS APPLICATION IN KOREA
Jung Ho Park, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.E3.3.10
THE POLISH SPACE SECTOR – THE FINAL STAGE OF THE EARLY DEVELOPMENT PHASE
Krzysztof Kanawka, Blue Dot Solutions, Poland

IAC-19.E3.3.11
A FOCUS ON THE "LAYERED" DEFINITIONS AND METRICS APPLIED TO ASI'S SPACE SECTOR'S AND SPACE ECONOMY TRENDS COMPREHENSIVE MEASUREMENTS
Giacomo Primo Sciortino, Italian Space Agency (ASI), Italy

IAC-19.E3.3.12 (withdrawn)
AN IMPLEMENTATION STRATEGY TO QUANTIFY THE SOCIOECONOMIC BENEFITS OF SATELLITE INFORMATION IN DECISIONMAKING
Bethany Mabee, Resources for the Future, United States

IAC-19.E3.3.13
ASSESSING THE ECONOMICS OF ASTEROID-DERIVED WATER FOR PROPELLANT
Thomas Colvin, IDA Science and Technology Policy Institute, United States

IAC-19.E3.3.14
ECONOMIC AND ETHICAL IMPLICATIONS OF OPEN DATA: LESSONS FROM THE LANDSAT PROGRAM
Mariel Borowitz, Georgia Institute of Technology, United States

E3.4. Assuring a Safe, Secure and Sustainable Environment for Space Activities

October 24 2019, 14:45 — 144A

Co-Chair(s): Ray A. Williamson, United States; Jana Robinson, The Prague Security Studies Institute, Czech Republic;
Rapporteur(s): Peter Stubbe, German Aerospace Center (DLR), Germany;

IAC-19.E3.4.1
FIRST FRUITS OF THE LONG-TERM SUSTAINABILITY DISCUSSIONS IN UN COPUOS: FROM GUIDELINE DEVELOPMENT TO GUIDELINE IMPLEMENTATION
Peter Martinez, Secure World Foundation, United States

IAC-19.E3.4.2
ASSESSING THE EMERGING NEED FOR A EUROPEAN APPROACH TO SPACE TRAFFIC MANAGEMENT
Tomas Hrozensky, European Space Policy Institute (ESPI), Austria

IAC-19.E3.4.3
IMPLICATIONS OF EMERGING SPACE NATION STAKEHOLDER PREFERENCES FOR FUTURE SPACE TRAFFIC MANAGEMENT SYSTEM ARCHITECTURE
Miles Lifson, Massachusetts Institute of Technology (MIT), United States

IAC-19.E3.4.4
INDUSTRY IMPLEMENTATION OF THE LONG-TERM SUSTAINABILITY GUIDELINES: AN ASTROSCALE PERSPECTIVE
Charity Weeden, ASTROSCALE JAPAN Inc., United States

IAC-19.E3.4.5
THE CRITICAL ROLE OF NORM-BUILDING AND COLLABORATION IN "STANDARDIZED, SAFE, AND SUSTAINABLE" COMMERCIAL ON-ORBIT SATELLITE SERVICING (OOS)
Luc Riesbeck, Space Policy Institute, George Washington University, United States

IAC-19.E3.4.6
FOR ESTABLISHING SPACE GOVERNANCE: DE-PACKAGEING THE ARGUMENTS
Kazuto Suzuki, Hokkaido University, Japan

IAC-19.E3.4.7
TOWARDS NORMS OF BEHAVIOR: OUTCOMES OF THE SUMMIT FOR SPACE SUSTAINABILITY
Krystal Wilson, Secure World Foundation, United States

IAC-19.E3.4.8
OVERCOMING SOVEREIGNTY FOR SPACE TRAFFIC MANAGEMENT
Ruth Stilwell, Space Policy Institute, George Washington University, United States

IAC-19.E3.4.9
PRIVATE AND PUBLIC COOPERATION IN SST IN SUPPORT OF AN EFFECTIVE STM SYSTEM
Giulia Pavesi, KU Leuven – University of Leuven, Italy

IAC-19.E3.4.10
INTERNATIONAL SPACE REFERENCE ARCHITECTURE (ISRA)
Nathaniel Dailey, The MITRE Corporation, United States

IAC-19.E3.4.11
THE WAY FORWARD TO ICSO : AN INTERNATIONAL ORGANIZATION TO HANDLE A SUSTAINABLE SPACE TRAFFIC MANAGEMENT.
Didier Alary, Université de Toulouse 1 Capitole, France

IAC-19.E3.4.12
ACTIVE DEBRIS REMOVAL: LEGAL, POLICY AND ECONOMIC ASPECTS
Ray A. Williamson, United States

E3.6. Economics of Procurement in Space Contracting

October 25 2019, 13:30 — 144A

Co-Chair(s): Eric Morel de Westgaver, ESA - European Space Agency, France; Henry Hertzfeld, Space Policy Institute, George Washington University, United States;
Rapporteur(s): Pieter Van Beekhuizen, European Space Agency (ESA), France; Karina Miranda Sanchez, ESA, The Netherlands;

IAC-19.E3.6.1
KEYNOTE: THE ECONOMICS OF PROCUREMENT IN SPACE & DEFENSE CONTRACTING
Eric Morel de Westgaver, ESA - European Space Agency, France

IAC-19.E3.6.2
ADAPTING ESA'S INDUSTRIAL POLICY TO THE NEWSPACE CONTEXT
Geraldine Naja, ESA, France

IAC-19.E3.6.3
THE POLITICAL ECONOMY OF PROCUREMENT: EVOLVING CHALLENGES FOR SPACE COLLABORATION
Vasilis Zervos, International Space University (ISU), France

IAC-19.E3.6.4
THE PROCUREMENT IN THE SPACE SECTOR: A STRATEGIC TOOL FOR INDUSTRIAL POLICY
Silvia Ciccarelli, Italian Space Agency (ASI), Italy

IAC-19.E3.6.5
GATEWAY PROGRAM ACQUISITION STRATEGY OVERVIEW
Emma Lehnhardt, NASA, United States

IAC-19.E3.6.6
FUTURE BUSINESS MODELS FOR SPACE COMPANIES
Frederick Slane, Space Infrastructure Foundation, United States

IAC-19.E3.6.7
SPACE INSURANCE AND RISK MANAGEMENT
Christopher Kunstadter, United States

IAC-19.E3.6.8
INNOVATIVE PARTNERSHIPS: A LEGAL-ECONOMIC ANALYSIS
Mirella Fatica, Italian Space Agency (ASI), Italy

E3.IP. Interactive Presentations - 32nd IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS

October 24 2019, 13:15 — IP Area

Co-Chair(s): Jacques Masson, European Space Agency (ESA), The Netherlands; Bernhard Schmidt-Tedd, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-19.E3.IP.1
CREATING AN AEROSPATIAL SPACE ECONOMY: THE CASE OF RIO GRANDE DO NORTE – BRAZIL
Alvaro Oliveira, Federal University of Rio Grande do Norte (UFRN), Brazil

IAC-19.E3.IP.2 (withdrawn)
A PROPOSED BLUEPRINT FOR AFRICAN UNIVERSITIES TOWARDS SUPPORTING THE AFRICAN SPACE AGENCY
Senior Shimhanda, Kyushu Institute of Technology, Japan

IAC-19.E3.IP.3
BRIDGING THE GAP OF SPACE INFRASTRUCTURAL DEFICIT IN AFRICA THROUGH PRIVATE FINANCE INITIATIVES
Mustapha Eleyawa Agbadi, Space Generation Advisory Council (SGAC), Nigeria

IAC-19.E3.IP.4
MARS/EUROPA INPPS: ALL RIGHT FOR UN NPS PRINCIPLES
Frank Jansen, DLR (German Aerospace Center), Germany

IAC-19.E3.IP.5
NATIONAL SPACE AGENDA AS A MIRROR OF SPACE POLICY
Gulnara Omarova, Fesenkov Astrophysical Institute, Kazakhstan

IAC-19.E3.IP.6
NATIONAL SPACE TECHNOLOGY SCOREBOARD: UPDATED VISUALIZATION TOOL FOR COMPARING COUNTRIES' RELATIVE SPACE ACHIEVEMENT
Soyoung Chung, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.E3.IP.7
SPACE SOVEREIGNTY VS DEPENDENCY – SPACE POLICY FOR NEW SPACE POWERS
Malcolm Davis, Australian Space Policy Institute (ASPI), Australia

IAC-19.E3.IP.8
THE PROCESS OF SPACE POLICY IN THE UNITED STATES
Kathryn Robison, The University of Alabama, United States

IAC-19.E3.IP.9
LAW ENFORCEMENT 2.0: LEGAL AND ETHICAL CONSIDERATIONS FOR POLICING PRIVATE SPACE ACTORS EX TERRA
Sara Langston, Embry-Riddle Aeronautical University, United States

IAC-19.E3.IP.10 (non-confirmed)
A BOLD LOOK INTO THE FUTURE: POLISH REGULATIONS ON SPACE ACTIVITIES
Marta Kolibabska, Poland

E4. 53rd IAA HISTORY OF ASTRONAUTICS SYMPOSIUM

Coordinator(s): A. Ingemar Skoog, Germany; Otfrid Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Kerrie Dougherty, Australia;

E4.1. Memoirs, Organizational, Scientific and Technical Histories

October 21 2019, 15:00 — 147B

Co-Chair(s): Marsha Freeman, 21st Century Science & Technology, United States; Sandra Haeuplik-Meusburger, Vienna University of Technology, Austria;
Rapporteur(s): Michael Ciancone, National Aeronautics and Space Administration (NASA), Johnson Space Center, United States; Karlheinz Rohrwild, Hermann-Oberth-Raumfahrt Museum e.V., Germany;

IAC-19.E4.1.1
OTTO PAUL FUCHS – A FORGOTTEN AUSTRIAN PIONEER OF ROCKETRY AND HIS ROCKET LAUNCHES IN SUMMER OF 1928
Karlheinz Rohrwild, Hermann-Oberth-Raumfahrt Museum e.V., Germany

IAC-19.E4.1.2
GEOFFREY E. PERRY MBE AND THE KETTERING GRAMMAR SCHOOL SATELLITE TRACKING UNIT, CA. 1960 - 1984
Douglas Millard, The Science Museum, United Kingdom

IAC-19.E4.1.3
ALDO ZEOLI, CHIEF OF ARGENTINE ROCKETEERS
Pablo de Leon, University of North Dakota, United States

IAC-19.E4.1.4
FROM CONTAMINATION TO STERILIZATION TO QUARANTINE TO PROTECTION: THE SIGNIFICANCE OF TERMINOLOGY ON AN INTERPLANETARY SCALE
Caroline Coward, NASA Jet Propulsion Laboratory, United States

IAC-19.E4.1.5
EARLY LUNAR BASE DESIGN – FROM SKETCH TO THE FIRST MOON LANDING
Sandra Haeuplik-Meusburger, Vienna University of Technology, Austria

IAC-19.E4.1.6
THE HIGH ALTITUDE RESEARCH PROJECT: AUSTRALIA'S FIRST ROCKOON PROGRAM
Kerrie Dougherty, Australia

IAC-19.E4.1.7
THE EARLY HISTORY OF CANADIAN PLANETARY EXPLORATION
Kieran Carroll, Gedex Systems Inc., Canada

IAC-19.E4.1.8
THE FASCINATING HISTORY OF HOW THE FAMILY PORTRAIT OF THE SOLAR SYSTEM BY VOYAGER 1 FINALLY CAME TO BE.
William Kosmann, The Astronautics Company, L.P., United States

IAC-19.E4.1.9
FOREWORD TO SPACEFLIGHT: AN ILLUSTRATED BIBLIOGRAPHICAL HISTORY OF SPACEFLIGHT
Michael Ciancone, National Aeronautics and Space Administration (NASA), Johnson Space Center, United States

IAC-19.E4.1.10
HOW SPACE ORGANISATIONS ADAPT TO CHANGING ENVIRONMENTS OVER TIME
Nathalie Tinjod, European Space Agency (ESA), France

E4.2. History of US Contribution to Astronautics Post WWII

October 23 2019, 14:45 — 147B

Co-Chair(s): Karlheinz Rohrwild, Hermann-Oberth-Raumfahrt Museum e.V., Germany; Otfrid Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;
Rapporteur(s): Radu Rugescu, Association Dedicated to Development in Astronautics (A.D.D.A), Romania; Rachel Tillman, The Viking Mars Missions Education and Preservation Project (VMMEPP), United States;

IAC-19.E4.2.1
AEROJET ENGINEERING CORPORATION: STIMULATION AND CREATION 1935-1942
Stephen E. Doyle, Clean Energy Systems, Inc., United States

IAC-19.E4.2.2
THE SPY RACE: FIRST DEVELOPMENTS ON US SPY SATELLITES DURING THE COLD WAR.
Angel Cuellar, Eurospace, France

IAC-19.E4.2.3
THE MARS PROJECT 1948 TO 1956 A.A.JACKSON TRITON SYSTEMS LLC HOUSTON TEXAS
Albert Jackson, Triton Systems LLC, United States

IAC-19.E4.2.4
A LOOK AT THE DURANT AND ORDWAY RELATIONSHIP AND HOW THEY IMPACTED SPACEFLIGHT
Randy Liebermann, United States

IAC-19.E4.2.5
JOSEPH GAVIN AND MIT'S CONTRIBUTION TO AERONAUTICS AND ASTRONAUTICS
Andrew Erickson, Naval War College/Harvard University, United States

IAC-19.E4.2.6
PIONEERING PRIVATE SPACEFLIGHT: ROBERT TRUAX AND HIS VOLKS ROCKET PROJECT
Rick Sturdevant, US DoD, United States

IAC-19.E4.2.7
BEYOND HIDDEN FIGURES: AN EXPLORATION OF AFRICAN AMERICAN WOMEN IN SPACE AND THEIR CONTRIBUTIONS TO THE SPACE ENDEAVOR
Viva Miller, National Aeronautics and Space Administration (NASA), United States

IAC-19.E4.2.8
CREATING SPACE FOR SCIENCE: FROM APOLLO TO SKYLAB
Hyoung Joon An, Science and Technology Policy Institute, Korea, Republic of

IAC-19.E4.2.9
THE FAILURE OF APOLLO: NASA'S MISTAKES - AND OURS
Benjamin Davis, The Davis Group, United States

IAC-19.E4.2.10 (withdrawn)
FROM THE MOON TO MARS: THE COMMON THREADS - MAPPING CELESTIAL BODIES
Rachel Tillman, The Viking Mars Missions Education and Preservation Project (VMMEPP), United States

IAC-19.E4.2.11
"THE GORGONS: AMERICA'S FIRST FAMILY OF MISSILES, 1943-1953"
Frank H. Winter, National Air and Space Museum, United States

E4.3. "Can you believe they put a man on the moon?" The Apollo Program.

October 24 2019, 14:45 — 147B

Co-Chair(s): Vera Pinto Gomes, European Commission, Belgium; John Charles, Space Center Houston, United States;
Rapporteur(s): Christophe Rothmund, Airbus Safran Launchers, France; Hannes Mayer, Karl Franzens Universität Graz, Austria;

IAC-19.E4.3.1
KEYNOTE: A GIRL IN THE MAN-ON-THE-MOON PROGRAM: CAMARADERIE AND DISCRIMINATION IN THE APOLLO ERA
Rhoda Shaller Hornstein, United States

IAC-19.E4.3.2
ARIA - NASA'S APOLLO AIRBORNE FIRE BRIGADE
Stanley Anderson, United States

IAC-19.E4.3.3
DORIS CHANDLER AND THE SATURN V GUIDANCE DEBATE
John Goodman, Odyssey Space Research, United States

IAC-19.E4.3.4
FRENCH CONTRIBUTION TO APOLLO 11 PLUS: I WAS THERE ON 16 JULY 1969!
Philippe Jung, Association Aéronautique & Astronautique de France (3AF), France

IAC-19.E4.3.5
APOLLO: A TESTBED FOR PLANETARY EXPLORATION
Philippe Henarejos, France

IAC-19.E4.3.6
GEMINI: PAVING THE WAY FOR APOLLO
Benjamin Davis, The Davis Group, United States

IAC-19.E4.3.7
LESSONS FROM THE LUNAR MODULE PROGRAM: THE DIRECTOR'S CONCLUSIONS
Andrew Erickson, Naval War College/Harvard University, United States

IAC-19.E4.3.8
INTERNATIONAL COOPERATION DURING THE SPACE RACE
Mai'a Cross, Northeastern University, United States

IAC-19.E4.3.9
THE MOON AGREEMENT 40 YEARS LATER
Hannes Mayer, Karl Franzens Universität Graz, Austria

E5. 30th IAA SYMPOSIUM ON SPACE AND SOCIETY

Coordinator(s): Geoffrey Languedoc, Canadian Aeronautics & Space Institute (CASI), Canada; Olga Bannova, University of Houston, United States;

E5.1A. Space Architecture: Habitats, Habitability, and Bases

October 21 2019, 15:00 — 145A

Co-Chair(s): Olga Bannova, University of Houston, United States; Brent Sherwood, United States;
Rapporteur(s): Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria;

IAC-19.E5.1A.1
INTERIOR CONFIGURATION CONCEPTS FOR THE GATEWAY IHAB
René Waclavicek, LIQUIFER Systems Group, Vienna, Austria

IAC-19.E5.1A.2
BOEING NEXTSTEP EFFORTS IN SUSTAINABLE LUNAR EXPLORATION
Matthew Duggan, The Boeing Company, United States

IAC-19.E5.1A.3
THE DEVELOPMENT OF FUTURE SPACE STATIONS FROM UPPER STAGES
Samuel Wald, Nanoracks, United States

IAC-19.E5.1A.4
REDESIGN OF SALYUT STATION FOR DUAL-USE OF RESEARCH AND TOURISM
Tamalee Basu, University of Houston, United States

IAC-19.E5.1A.5
DEFINING BEST DESIGN PRACTICES FOR SAFETY AND COMFORT IN MOON AND MARS HABITATS
Tatiana Volkova, Ecole Polytechnique Fédérale de Lausanne (EPFL), Swiss Space Center (SSC), Switzerland

IAC-19.E5.1A.6
REDUCED GRAVITY EXPERIMENT: INVESTIGATING THE EFFECTS OF REDUCED GRAVITY ON CIRCULATION IN HABITAT ARCHITECTURE
Karl-Johan Sørensen, Denmark

IAC-19.E5.1A.7
A CASE FOR THE SPACE BATHROOM
Zachary Taylor, United States

IAC-19.E5.1A.8
NASA CENTENNIAL CHALLENGE:THREE DIMENSIONAL (3D) PRINTED HABITAT, PHASE III COMPETITION OUTCOMES
Robert Mueller, National Aeronautics and Space Administration (NASA), United States

IAC-19.E5.1A.9
PROTOTYPING MARSHA: DISCOVERIES, SURPRISES AND LESSONS IN ADDITIVE HABITAT CONSTRUCTION
Jeffrey Montes, AI SpaceFactory, United States

IAC-19.E5.1A.10
FIBER REINFORCED POLYETHYLENE-BASALT COMPOSITES - FABRICATION AND TESTING
Nicholas McGhee, United States

IAC-19.E5.1A.11
A DANGEROUS PRECEDENT; THE GEODESIC DOME AS A CREDIBLE SPACE ARCHITECTURE TYPOLOGY.
Craig McCormack, University of Western Australia (UWA), Australia

IAC-19.E5.1A.12
SPACE HABITAT RECONFIGURABILITY: TESSERAE PLATFORM FOR SELF-AWARE ASSEMBLY
Ariel Ekblaw, Massachusetts Institute of Technology (MIT), United States

E5.1B. Space Architecture: Habitats, Habitability, and Bases

October 25 2019, 13:30 — 145A

Co-Chair(s): Olga Bannova, University of Houston, United States; Brent Sherwood, United States;
Rapporteur(s): Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria;

IAC-19.E5.1B.1
REUTILIZE AN EMPTY SLS UPPER STAGE HYDROGEN TANK INTO HABITATION MODULE FOR LUNAR ORBITAL PLATFORM-GATEWAY
Shunsuke Miyazaki, University of Houston, United States

IAC-19.E5.1B.2
BUBBLE ONE – SCALABLE SHIRT SLEEVE SPACE CONSTRUCTION SYSTEM UTILIZING INFLATABLE MOLDS AND SPACE RESOURCES
Rick Tumlinson, United States

IAC-19.E5.1B.3
THE REMNANT PROJECT: BUILDING A SELF-SUSTAINABLE LUNAR HABITAT FOR LONG-TERM HUMAN MISSIONS TO THE MOON
Roberto Rodriguez, Instarz, LLC, Puerto Rico

IAC-19.E5.1B.4
RESULTS OF THE AIAA PHOBOS BASE STUDENT DESIGN COMPETITION
Marc M. Cohen, Space Cooperative Inc., United States

IAC-19.E5.1B.5
MARTIAN GREENHOUSE ARCHITECTURE: ENABLING HABITABILITY, SAFETY AND AESTHETICS
Mahsa Moghimi Esfandabadi, University of Houston, United States

IAC-19.E5.1B.6
HYBRID HABITAT FOR MARS: CREATING COMFORT WITH LIGHT.
Layla van Ellen, Delft University of Technology (TU Delft), The Netherlands

E5.2. Is Space R&D Truly Fostering A Better World For Our Future?

October 22 2019, 14:45 — 145A

Co-Chair(s): Olga Bannova, University of Houston, United States; Nona Minnifield Cheeks, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States;
Rapporteur(s): Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria;

IAC-19.E5.2.1
WHAT HORTICULTURE AND SPACE EXPLORATION CAN LEARN FROM EACH OTHER: THE MISSION TO MARS INITIATIVE IN THE NETHERLANDS
Angelo C.J. Vermeulen, Delft University of Technology (TU Delft), The Netherlands

IAC-19.E5.2.2
SUSTAINABILITY VERSUS EXPONENTIAL GROWTH IN IN-SITU RESOURCE UTILIZATION (ISRU) RESEARCH AGENDAS
Tamara Alvarez, United States

IAC-19.E5.2.3
PRIVATE SECTOR EMPOWERMENT FOR DOMESTIC LONG-TERM SUSTAINABLE SPACE DEVELOPMENT
Nammi Choe, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-19.E5.2.4
THE NEW GLOBAL GOVERNANCE IN THE AEROSPACE INDUSTRY: NEW TECHNOLOGICAL CAPABILITIES IN BRAZIL, CHINA AND CANADA
Sofía Andrea Huerta Ramírez, Universidad Nacional Autónoma de México, Mexico

IAC-19.E5.2.5
SPACE TECHNOLOGY WITH SYSTEMS THEORY – BENEFIT TO SOCIETY
Sias Mostert, Space Commercial Services Holdings (Pty) Ltd, South Africa

IAC-19.E5.2.6
SPACE R&D TO ENHANCE LIVE IN EMERGING SPACE COUNTRIES IN AFRICA AND LATIN AMERICA
Annette Froehlich, LL.M., MAS, European Space Policy Institute (ESPI)German Aerospace Center (DLR), Austria

IAC-19.E5.2.7
INCREASE QUANTUM COMPUTING TECHNOLOGY READINESS LEVEL THROUGH EXPERIMENTATION IN SPACE
Giuseppe Correale, The Netherlands

IAC-19.E5.2.8
ANALYSIS AND PERSPECTIVES OF THE SPACE SECTOR IN PUBLIC POLICY OF SCIENCE, TECHNOLOGY AND INNOVATION IN MEXICO: RECOMMENDATIONS FROM YOUNG STUDENTS AND PROFESSIONALS
Tania María Robles Hernández, Space Generation Advisory Council (SGAC), Mexico

IAC-19.E5.2.9
VALUE GENERATION THROUGH PUBLIC PROCUREMENT OF INNOVATIVE EARTH OBSERVATION APPLICATIONS: SERVICE-DOMINANT LOGIC PERSPECTIVE
Tõnis Eerme, University of Tartu, Estonia

IAC-19.E5.2.10
THE BUSINESS-ORIENTED ADVANCED TECHNOLOGY LUXEMBOURG SPACE RESOURCES RESEARCH CENTER (LS2RC)
Mathias Link, Luxembourg Ministry of the Economy, Luxembourg

IAC-19.E5.2.11
ROADMAP TO RESPONSIBLE AND SUSTAINABLE BUILDING ON MARS
Agata Mintus, Delft University of Technology, The Netherlands

IAC-19.E5.2.12
WOMEN, STEM (SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS) AND THE R&D INVESTMENT TO IMPROVE THE AEROSPACE TECHNOLOGY IN THE DEVELOPING WORLD. CASE STUDY: EL SALVADOR AND GENDER EQUALITY
Luis Alfaro, EL Salvador Aerospace Institute (ESAI), El Salvador

E5.3. Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach

October 23 2019, 14:45 — 145A

Co-Chair(s): Richard Clar, Art Technologies, United States; Daniela de Paulis, Rietveld Academy/ASCA - University of Amsterdam, The Netherlands;
Rapporteur(s): Yuri Tanaka, Tokyo University of the Arts, Japan;

IAC-19.E5.3.1
KEYNOTE: THE OVERVIEW EFFECT AND THE ARTS
Frank White, American Institute of Aeronautics and Astronautics (AIAA), United States

IAC-19.E5.3.2
THE UNSEEN WORLDS: USING FEATURE FILM TECHNIQUES FOR SPACE MISSION PLANNING
Lizbeth B. De La Torre, Massachusetts Institute of Technology (MIT), United States

IAC-19.E5.3.3
THE SPACE FARMING PROJECT: SPACE COLONIZATION, TECHNO-AGRICULTURE AND THE FUTURE OF EXTRATERRESTRIAL BIOPOLITICS
Angelo C.J. Vermeulen, Delft University of Technology (TU Delft), The Netherlands

IAC-19.E5.3.4
SPACE EXPLORATION AS A CULTURAL OBJECT: HOW AND WHY SPACE AGENCIES SHOULD ENGAGE WITH ARTISTS
Andrew Kuh, UK Space Agency, United Kingdom

IAC-19.E5.3.5
COGITO IN SPACE AT THE DWINGELOO RADIO TELESCOPE
Daniela de Paulis, The Netherlands

IAC-19.E5.3.6
UNCERTAIN GARDEN – SPACE DESIGN FOR FERTILIZING UNCERTAINTY AT IDEASQUARE, CERN
Yuri Tanaka, Tokyo University of the Arts, Japan

IAC-19.E5.3.7
GIANT STEP: THE MUSIC OF NEIL ARMSTRONG'S HEARTBEAT RETURNS TO THE MOON
Richard Clar, Art Technologies, United States

IAC-19.E5.3.8
CHOREOGRAPHIC TECHNIQUES FOR HUMAN BODIES IN WEIGHTLESSNESS
Adam Dipert, Arizona State University, United States

IAC-19.E5.3.9
CURATING THE HUMAN EXPERIENCE OF SPACE—A COLLABORATIVE, INCLUSIVE APPROACH
Xin Liu, Massachusetts Institute of Technology (MIT), United States

IAC-19.E5.3.10
MOON GALLERY
Anna Sitnikova, ILEWG ExoGeoLab Team, The Netherlands

IAC-19.E5.3.11
THE VALUE OF ART AS AN URBAN INTERVENTION FOR EXTRATERRESTRIAL SETTLEMENTS AND ITS IMPACT ON THE SUBCONSCIOUS PERCEPTION OF TIME AND SPACE
Monika Lipinska, International Space University, France

IAC-19.E5.3.12
APOLLO AND THE MUSES: CULTURAL AND TECHNICAL INSPIRATIONAL KNOWLEDGE EMBEDDED IN LUNAR SPACE ARTS.
Sarah Jane Pell, ESA Topical Team Arts & Science, Australia

E5.4. Space Assets and Disaster Management

October 24 2019, 14:45 — 145A

Co-Chair(s): Geoffrey Languedoc, Canadian Aeronautics & Space Institute (CASI), Canada; Jillianne Pierce, Space Florida, United States;

IAC-19.E5.4.1 (non-confirmed)
COPERNICUS LEGAL CHALLENGES WITH OPEN DATA POLICIES IN CASE OF DISASTERS
Sandra Cabrera Alvarado, University of Luxembourg, Luxembourg

IAC-19.E5.4.2
MORAZÁN PROJECT: POTENTIAL IMPACT ON THE DEVELOPMENT OF TECHNICAL INTERNATIONAL COOPERATION IN CENTRAL AMERICA, SPECIFICALLY BETWEEN COSTA RICA - HONDURAS – GUATEMALA
Vivian Calderón Pérez, Central American Association for Aeronautics and Space (ACAE), Costa Rica

IAC-19.E5.4.3
SPATIO-TEMPORAL ANALYSIS OF OIL SPILLS IN THE PERUVIAN AMAZON
Natalia Indira Vargas-Cuentas, Image Processing Research Laboratory (INTI-Lab). Universidad de Ciencias y Humanidades - UCH, Peru

IAC-19.E5.4.4
A SUMMARY OF THE UNITED STATES'S NATIONAL NEAR-EARTH OBJECT PREPAREDNESS STRATEGY AND ACTION PLAN.
Lindley Johnson, NASA Headquarters, United States

IAC-19.E5.4.5
LAPAN-A2 (IO-86) SATELLITE ROLES IN NATURAL DISASTER IN INDONESIA
Wahyudi Hasbi, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

IAC-19.E5.4.6 (withdrawn)
COMBINING SPACE DATA WITH AI TECHNIQUES TO IMPROVE DISASTER RESPONSE TIMES
James Parr, Frontier Development Lab, United Kingdom

IAC-19.E5.4.7
NEW FUNCTIONALITIES OF THE EUROPEAN FOREST FIRE INFORMATION SYSTEM WHICH ADVANCE DISASTER MANAGEMENT AND SUSTAINABLE DEVELOPMENT GOALS
Pierre-Alexis Lagadrilliere, DLR (German Aerospace Center), Germany

IAC-19.E5.4.8
SPACE TECHNOLOGIES USED IN THE MANAGEMENT AND RISK REDUCTION OF NATURAL DISASTER IN LATIN AMERICA: A SYSTEMATIC LITERATURE REVIEW
Glayse Ferreira Perroni da Silva, Technological Institute of Aeronautics - ITA/CTA, Brazil

IAC-19.E5.4.9
FIXING THE GLOBAL CARBON CRISIS WITH SPACE DEVELOPMENT
Jennifer Bolton, Australia

IAC-19.E5.4.10
SPACE TECHNOLOGIES FOR WILDFIRE MONITORING BY GOVERNMENTAL ORGANIZATIONS
Samuel Looper, University of Toronto Aerospace Team (UTAT), Canada

IAC-19.E5.4.11
NASA EARTH SCIENCE ACTIVITIES SUPPORTING RESPONSE TO AND PREPAREDNESS FOR NATURAL DISASTERS
Andrew Molthan, NASA Marshall Space Flight Center, United States

IAC-19.E5.4.12
CITIZEN SCIENCE - AN IDEA TO INTEGRATE SCIENCE INTO OUR DIGITIZED WORLD
Peter Pusztai, Hungarian Astronautical Society (MANT), Hungary

E5.5. Sharing space achievements and heritage: space museums and societies

October 25 2019, 15:00 — 145A

Co-Chair(s): Scott Hatton, The British Interplanetary Society, United Kingdom; Jean-Baptiste Desbois, SEMECCEL Cité de l'Espace, France; Ines Prieto, SEMECCEL Cité de l'Espace, France;
Rapporteur(s): Clementine Decoopman, Space Generation Advisory Council (SGAC), Austria;

IAC-19.E5.5.1
LEARNING FROM THE PAST TO INFORM THE FUTURE
Jennifer Levasseur, National Air and Space Museum, United States

IAC-19.E5.5.2
IN THE MOOD FOR THE MOON… CITÉ DE L'ESPACE AND THE APOLLO ANNIVERSARY, REFLECTING ON THE PAST, LOOKING AT THE FUTURE.
Ines Prieto, SEMECCEL Cité de l'Espace, France

IAC-19.E5.5.3
REMEMBERING THE NEXT APOLLO: CHALLENGES TO PRESERVING AND PRESENTING THE NEXT 50 YEARS OF SPACEFLIGHT
Geoff Nunn, United States

IAC-19.E5.5.4
CELEBRATING THE 50TH ANNIVERSARY OF THE FIRST PERSON ON THE MOON IN THE NETHERLANDS
Peter Batenburg, Netherlands Space Society (NVR), The Netherlands

IAC-19.E5.5.5
INTERNATIONAL COLLABORATION STRATEGIES FOR THE INTERNATIONAL ASTRONOMICAL UNION'S 100TH ANNIVERSARY CELEBRATIONS (IAU100)
Bethany Downer, Leiden University, Canada

IAC-19.E5.5.6 (withdrawn)
MONSTERS OF THE PLANETARY WEATHER: INTERACTIVE MUSEUM INSTALLATION ON EXTREME CLIMATES IN THE SOLAR SYSTEM.
Cintia Durán, Mexico

IAC-19.E5.5.7
ONE SMALL STEP? COLLECTION STRATEGIES FOR LIBRARIES, ARCHIVES, AND MUSEUMS IN THE SPACE AGE
Reagan Grimsley, University of Alabama in Huntsville, United States

E5.IP. Interactive Presentations - 30th IAA SYMPOSIUM ON SPACE AND SOCIETY

October 24 2019, 13:15 — IP Area

Co-Chair(s): Geoffrey Languedoc, Canadian Aeronautics & Space Institute (CASI), Canada; Olga Bannova, University of Houston, United States;

IAC-19.E5.IP.1
PRESERVING AND SHARING AEROSPACE HISTORY THROUGH CROSS GENERATIONAL AND INTERACTIVE COLLABORATIVE ACTIVITIES
Rachel Tillman, The Viking Mars Missions Education and Preservation Project (VMMEPP), United States

IAC-19.E5.IP.2
SCRUM AND THE ART OF INTERNATIONAL SPACE LAW
David Lopez, National Aeronautics and Space Administration (NASA), United States

IAC-19.E5.IP.3
SPACE SATELLITES FOR A HEALTHY EARTH
Wendy Vasquez, Université de Sherbrooke, Canada

IAC-19.E5.IP.4
TECHNICAL AND ECONOMIC ASSESSMENT OF ISRU AND NON-ISRU LUNAR HABITAT RADIATION SHIELD
Chris Spedding, Open University, United Kingdom

IAC-19.E5.IP.5
A CASE STUDY OF HUMAN FACTOR & ANTHROPOLOGICAL INVESTIGATIONS IN SPACE MISSION SIMULATIONS AND ANALOGS.
Benjamin Pothier, Plymouth University, France

IAC-19.E5.IP.6
SPACE SOLUTION TO WORLD'S WATER CRISIS: A CASE STUDY WITH REMOTE SENSING, SCIENCE AND TECHNOLOGY IN SYNERGY
Miracle Israel Nazarious, Luleå University of Technology, Sweden

IAC-19.E5.IP.7
AUSTRALIAN SPACE AGENCY - A BRAND STORY DRAWING ON AUSTRALIA'S PAST, PRESENT AND FUTURE.
Anthony Murfett, Australian Space Agency, Australia

IAC-19.E5.IP.8
ASTRO-TOURISMS: A CONCEPT AND POSSIBILITY IN NEPAL
Sabin Gautam, Pokhara Astronomical Society, Nepal

IAC-19.E5.IP.9
UAE SPACE AGENCY EFFORTS ON SPREADING AWARENESS OF THE UAE SPACE SECTOR
Maitha Al Romaithi, UAE Space Agency, United Arab Emirates

IAC-19.E5.IP.10
WITHOUT SPACE
Bal Dhital, Newcastle University, Australia

IAC-19.E5.IP.11
HUMAN SUSTAINABILITY BY SPACE ENGINEERING
Ildiko Tulbure, 1 December 1918 University of Alba Iulia, Romania

E6. IAF BUSINESS INNOVATION SYMPOSIUM

Coordinator(s): Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States;

E6.1. Entrepreneurship and Innovation: The Practitioners' Perspectives

October 22 2019, 14:45 — 147B

Co-Chair(s): Gary Martin, Luxembourg Space Agency, Luxembourg; Charles Lauer, Rocketplane Global, Inc., United States;
Rapporteur(s): Ian Christensen, Secure World Foundation, United States;

IAC-19.E6.1.1
THE RISE OF SPACE ENTREPRENEURSHIP: TRENDS IN THE ENTREPRENEURSHIP AND INVESTMENT COMMITTEE
Manny Shar, Bryce Space and Technology, United Kingdom

IAC-19.E6.1.2 (non-confirmed)
FROM BASIC RESEARCH TO TECHNOLOGICAL APPLICATION IN THE MEXICAN SPACE SECTOR
Verania Echaide, Mexican Space Agency, Mexico

IAC-19.E6.1.3
THE NATIONAL AEROSPACE AND AIRSPACE PROGRAM (PNAEA) OF EL SALVADOR AND THE ALTERNATIVE OF USING A LOGICAL FRAMEWORK APPROACH (LFA)
Luis Alfaro, EL Salvador Aerospace Institute (ESAI), El Salvador

IAC-19.E6.1.4
A SWEDISH PERSPECTIVE ON INNOVATION AND GROWTH FOR SPACE
Johanna Bergstrom Roos, Luleå University of Technology, Sweden

IAC-19.E6.1.5
ESA BICS: ENABLING SPACE ENTREPRENEURSHIP IN NON-ESA MEMBER STATES
Lluc Diaz, ESA, The Netherlands

IAC-19.E6.1.6
ASTROPRENEURS: SPACE START-UP ACCELERATOR
Michal Kunes, Czech Republic

IAC-19.E6.1.7
ASSESSING THE POTENTIAL FOR COMMERCIAL SPACE TOURISM: AN ECOSYSTEM STUDY OF AUSTRALIA
Joshua Western, Space Generation Advisory Council (SGAC), United Kingdom

IAC-19.E6.1.8
BOOSTING INNOVATION BETWEEN SPACE AND NON-SPACE SECTORS: THE BUSINESS CASE OF SPACEUP PROJECT
Lorenzo Scatena, Research Consortium Hypatia, Italy

IAC-19.E6.1.9 (non-confirmed)
REVOLUTIONIZING THE COFFEE ROASTING PROCESS IN OUTER SPACE: HOW SPACE TECHNOLOGY AND MICROGRAVITY CAN ENHANCE PRODUCTS ON EARTH
Anders Cavallini, International Space University, France

IAC-19.E6.1.10
INDUSTRY 4.0 STANDARDS FOR RIDESHARE AGGREGATION MANAGEMENT.
Ksenia Lisitsyna, Precious Payload, Russian Federation

IAC-19.E6.1.11
SPACE TOURISM: EXPLORATION PARK
Shanthini K, AgniKul Cosmos, India

IAC-19.E6.1.12
HOW TO BUILD A SPACE CLUSTER
Conor Duggan, United States

IAC-19.E6.1.13 (withdrawn)
DIGITALIZATION AND INDUSTRY 4.0, A COMPARISON BETWEEN OLD SPACE AND NEW SPACE
Egbert Jan van der Veen, OHB System, Germany

IAC-19.E6.1.14
EVALUATING THE PROJECTED OVER-SUPPLY WITHIN THE INCREASINGLY CROWDED LAUNCH VERTICAL AND DISCUSSION OF HOW THIS MAY AFFECT THE INFLUX OF INVESTOR CAPITAL INTO THE SECTOR
Meagan Crawford, United States

E6.2. Finance and Investment: The Practitioners' Perspectives

October 23 2019, 09:45 — 140B

Co-Chair(s): Joerg Kreisel, JOERG KREISEL International Consultant (JKIC), Germany; Manny Shar, Bryce Space and Technology, United Kingdom; Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States;
Rapporteur(s): Luigi Scatteia, PricewaterhouseCoopers Advisory, France;

IAC-19.E6.2.1
INVESTING OR DOING ENTREPRENEURSHIP IN NEWSPACE? WHAT DOES THAT MEAN? DEFINING THE CATEGORIES OF INVESTMENT, FINANCING AND TECHNOLOGY DEVELOPMENT AND WHY IT IS IMPORTANT.
Jose Ocasio-Christian, United States

IAC-19.E6.2.2
START-UP SPACE: GLOBAL INVESTMENT TRENDS
Manny Shar, Bryce Space and Technology, United Kingdom

IAC-19.E6.2.3
HOW TO ACCELERATE DOWNSTREAM AND UPSTREAM STARTUPS?
Krzysztof Kanawka, Blue Dot Solutions, Poland

IAC-19.E6.2.4
HORIZON 2020: A SIGHT TO THE EUROPEAN ENTREPRENEURIAL DYNAMICS
Rosa Maria Lucia Parrella, Agenzia Spaziale Italiana (ASI), Italy

IAC-19.E6.2.5
BOOSTING THE COMPETITIVENESS OF THE EUROPEAN SPACE SECTOR THROUGH ALTERNATIVE FINANCING: THE ESA-EIB INITIATIVE
Christina Giannopapa, European Space Agency (ESA), France

IAC-19.E6.2.6
FINANCIAL PRODUCTS AND CONSIDERATIONS IN COOPERATION PROPOSALS FOR COUNTRIES WITH NON-AEROSPACE DEVELOPMENT
Carolina Fernandez Garcia, Central American Association for Aeronautics and Space (ACAE), Costa Rica

IAC-19.E6.2.7
INVESTMENT IN THE AUSTRALIAN SPACE SECTOR
Jacob Hacker, KPMG, Australia

IAC-19.E6.2.8
RESULTS OF SPACE INITIATIVES IN PIEMONTE REGION SUPPORTING INNOVATION AND INTERNATIONALIZATION OF SME'S
Margherita Resce, Italy

IAC-19.E6.2.9
BLAST-OFF FOR SPACE BUSINESS IN JAPAN - TOWARD CREATING AND BROADENING THE MARKET
Misuzu Onuki, Space Access Corporation, Japan

IAC-19.E6.2.10
NEW MODEL OF SPACE FUNDING AND ITS ROLE IN FUTURE CAPACITY BUILDING. TOKENISATION OF SPACE ASSETS AND SECURITY TOKEN OFFERING (STO) AS A KEY DRIVER OF FUTURE SPACE MISSIONS.
Pavlo Tanasyuk, University of Cambridge, United Kingdom

IAC-19.E6.2.11
THE TRAVERSE CITY SPACE ACCELERATOR – A CASE STUDY FOR ECONOMIC GROWTH AND DIVERSIFICATION IN MICHIGAN
Charles Lauer, Rocketplane Global, Inc., United States

IAC-19.E6.2.12
PREFERRED POLICY INSTRUMENTS TO ACHIEVE U.S. GOVERNMENT GOALS FOR HUMAN SPACE FLIGHT AND PRIVATE SECTOR SPACE MARKETS
Evan Linck, IDA Science and Technology Policy Institute, United States

E6.3. Innovation: The Academics' Perspectives

October 24 2019, 09:45 — 152A

Co-Chair(s): Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States; Claire Jolly, Organisation for Economic Co-operation and Development (OECD), France;

IAC-19.E6.3.1
WHAT IS COMMERCIAL SPACE? AND WHY DOES THAT MATTER?
Bhavya Lal, IDA Science and Technology Policy Institute, United States

IAC-19.E6.3.2
ANALYTICAL OUTLOOK OF THE COMMERCIAL SPACE INDUSTRY FOR THE LAST FRONTIER: AN ENTREPRENEURIAL POTENTIAL EVALUATION OF THE AFRICAN SPACE SECTOR.
Oyedamola Asiyanbola, Skolkovo Institute of Science and Technology, Russian Federation

IAC-19.E6.3.3
APPLYING THE DIAMOND APPROACH TO THE COMPETITIVENESS OF THE AFRICAN SPACE INDUSTRY - A CASE STUDY OF GHANA
Kwaku Sumah, Technical University of Munich, Germany

IAC-19.E6.3.4
FINANCE AND INVESTMENT NEEDS OF SPACE SMES IN EUROPE: A SURVEY-BASED ANALYSIS
Yasen ILIEV, Luxembourg

IAC-19.E6.3.5 (withdrawn)
HOW DOES NEW SPACE ACCELERATE MANAGERIAL INNOVATION. A SOCIOLOGICAL ANALYSIS OF THE "AGILE TRANSFORMATION" IN THE EUROPEAN SPACE INDUSTRY.
Morgane Baladron, Thales Alenia Space, France

IAC-19.E6.3.6
DRIVERS AND BARRIERS FOR CROSS-SECTORAL COLLABORATION BETWEEN THE AEROSPACE AND THE SECURITY/DEFENCE SECTORS
Ntorina Antoni, Eindhoven University of Technology, The Netherlands

IAC-19.E6.3.7
THE EFFECTS OF INSTITUTIONAL LOGICS ON ENTREPRENEURSHIP IN THE SPACE SECTOR. THE CASE OF THE CZECH REPUBLIC
Christopher Vasko, European Space Agency (ESA), France

IAC-19.E6.3.8
RESEARCH ON THE DEVELOPMENT PATH OF AEROSPACE INDUSTRY BASED ON BUSINESS MODEL INNOVATION
Wenyi CAI, China Academy of Launch Vehicle Technology(CALT), China

IAC-19.E6.3.9
ENABLERS, EQUIPPERS, SHAPERS AND MOVERS: A TYPOLOGY OF INNOVATION INTERMEDIARIES INTERVENTIONS AND THE DEVELOPMENT OF AN EMERGENT INNOVATION SYSTEM
Matjaz Vidmar, The University of Edinburgh, United Kingdom

IAC-19.E6.3.10
REFLECTIONS ON THE DEVELOPMENT OF THE INDONESIAN SPACE INDUSTRY
Yunita Permatasari, LAPAN, National Institute of Aeronautics and Space, Indonesia, Indonesia

IAC-19.E6.3.11
FOSTERING CREATIVITY AND INNOVATION WITHIN SCIENCE AND TECHNOLOGY TEAMS
Crystal Forrester, Defence Science and Technology Group (DST Group), Australia

IAC-19.E6.3.12
WHY SOLVE NASA OPEN INNOVATION CHALLENGES? AN ANALYSIS OF SOLVER MOTIVATIONS FROM NASA'S ASTROBEE CHALLENGE SERIES
Lihui Lydia Zhang, Massachusetts Institute of Technology (MIT), United States

IAC-19.E6.3.13
DOES ONLY INNOVATION STIMULATES NEW SPACE?
Dirk-Roger Schmitt, DLR (German Aerospace Center), Germany

E6.4. Strategic Risk Management for Successful Space & Defence Programmes

October 25 2019, 09:45 — 144A

Co-Chair(s): Maria-Gabriella Sarah, European Space Agency (ESA), France; Ruediger Suess, [unlisted], Germany; Helen Tung, Moon Village Association (MVA), United Arab Emirates;
Rapporteur(s): David M. Lengyel, George Washington University, United States; Andrew Court, TNO, The Netherlands;

IAC-19.E6.4.1
KEYNOTE: MANAGING RISK IN THE EFFORT TO MAINTAIN ORBITAL SUSTAINABILITY
Chris Blackerby, Astroscale Ltd, Japan

IAC-19.E6.4.2
IMPACTS OF HIGH-VOLUME PRODUCTION (HVP) ON SPACE SYSTEMS
David Eccles, The Aerospace Corporation, United States

IAC-19.E6.4.3 (withdrawn)
ERM AND COGNITIVE BIASES IN THE SPACE PROJECTS FIELD
Massimo De Angelis, Italian Space Agency (ASI), Italy

IAC-19.E6.4.4
ENTERPRISE RISK MANAGEMENT AND SPACE INSURANCE
Nishant Choksi, Ares Advisors LLC, United States

IAC-19.E6.4.5
WILL COMMERCIAL SPACEFLIGHT DELIVER?
Mike Lutomski, United States

IAC-19.E6.4.6
INDUSTRY SUPPORT MECHANISMS FOR AEROSPACE: THE ROADMAPPING APPROACH
Marie Botha, Council for Scientific and Industrial Research (CSIR), South Africa

IAC-19.E6.4.7
KNOWLEDGE MANAGEMENT AS MITIGATION OF STRATEGIC RISKS
Andrea Vena, ESA, France

IAC-19.E6.4.8
RISK MITIGATION BASED ON INNOVATIVE SOLUTIONS
Marina Pokrovskaya, Germany

IAC-19.E6.4.9
CREATING STARTUPS WITH NASA TECHNOLOGY: REDUCING RISKS FOR NASA, INVESTORS AND ENTREPRENEURS THROUGH A PUBLIC-PRIVATE PARTNERSHIP
Sidney Nakahodo, New York Space Alliance, United States

IAC-19.E6.4.10
THE ROLE OF NATIONAL SPACE POLICY IN ADDRESSING OUTER SPACE SECURITY CHALLENGES
Fatima AlShamsi, UAE Space Agency, United Arab Emirates

IAC-19.E6.4.11
CERTIFICATION OF A POINT TO POINT SPACE TRANSPORTATION VEHICLE
Marc Vales, Dassault Aviation, France

IAC-19.E6.4.12
TRADE CONTROLS AND RISK MANAGEMENT
Megan Kane, Spire Global, Inc., United States

IAC-19.E6.4.13
PROBABILISTIC RISK ASSESSMENT AS PART OF THE RISK MANAGEMENT PROCESS AT JPL
Todd Paulos, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

E6.5-GTS.1. Entrepreneurship Around the World

October 25 2019, 13:30 — 147B

Co-Chair(s): Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States; Elizabeth Seward, Airbus Defence and Space Ltd, United Kingdom;

IAC-19.E6.5-GTS.1.1
INTRODUCING A TECHNICAL FEASIBILITY FRAMEWORK FOR A COMMERCIALIZED, LOW-LATITUDE SPACEPORT IN COSTA RICA
Saunon Malekshahi, University California Berkeley, United States

IAC-19.E6.5-GTS.1.2
ANALYSIS OF THE NEWSPACE MARKET IN THE 21ST CENTURY - A PROPOSAL FOR A NEWSPACE ACTOR CLASSIFICATION SYSTEM AND ENVIRONMENT ASSESSMENT FRAMEWORK
KangSan Kim, Space Generation Advisory Council (SGAC), United States

IAC-19.E6.5-GTS.1.3
SPACE ENTREPRENEURSHIP IN IRAN
Sajjad Ghazanfarinia, Iran

IAC-19.E6.5-GTS.1.4
PLANETARY PROTECTION ISSUES OF PRIVATE ENDEAVOURS IN RESEARCH, EXPLORATION, AND HUMAN ACCESS TO SPACE: A PILOT STATED PREFERENCE VALUATION STUDY
Georgios Profitiliotis, National Technical University of Athens, Greece

IAC-19.E6.5-GTS.1.5 (withdrawn)
A STUDY OF HOW TO IMPLEMENT INNOVATIVE SPACE PROJECTS IN THE BITCOIN ERA
Luis Ángel Castellanos Velasco, Universidad Nacional Autónoma de México, Mexico

IAC-19.E6.5-GTS.1.6
ASTRAX SPACE SERVICES PLATFORM BY USING BLOCK CHAIN TECHNOLOGY
Taichi Yamazaki, Japan

IAC-19.E6.5-GTS.1.7
MANAGING THE RISK OF THE SPACE PROJECTS FROM THE PERSPECTIVE OF NEWSPACE SME. BURDEN OF CHANGING LANDSCAPE
Katarzyna Malinowska, Kozminski University, Poland

IAC-19.E6.5-GTS.1.8
CHALLENGES AND THE CONQUERING THEREOF IN THE SPACE INDUSTRY IN SOUTH AFRICA
Ana-Mia Louw, South Africa

IAC-19.E6.5-GTS.1.9
SPACEONEERS: ENABLING A NEW GENERATION OF SPACE PIONEERS
Sebastian Davis Marcu, Design & Data GmbH, Germany

IAC-19.E6.5-GTS.1.10
THE CHALLENGES IN FUNDING SPACE AND INNOVATION AND THE UNIQUE PROGRAMMES AND SOLUTIONS WITHIN LESSER DEVELOPED AFRICAN COUNTRIES.
Carla Sharpe, SKA South Africa, South Africa

IAC-19.E6.5-GTS.1.11
WHAT DOES IT TAKE TO RUN A NEW SPACE STARTUP? AN EMPIRICAL STUDY ON THE CHALLENGES AND OPPORTUNITIES IN THE EUROPEAN NEW SPACE MARKET
Lihui Lydia Zhang, Massachusetts Institute of Technology (MIT), United States

E6.IP. Interactive Presentations - IAF BUSINESS INNOVATION SYMPOSIUM

October 24 2019, 13:15 — IP Area

Co-Chair(s): Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States;

IAC-19.E6.IP.1
ESA PARTNERSHIPS: A RISKY BUSINESS?
Maria-Gabriella Sarah, European Space Agency (ESA), France

IAC-19.E6.IP.2
HIRING PROCESS, CHALLENGES AND OPPORTUNITIES FOR NEWSPACE STARTUPS - RECRUITER PERSPECTIVES AND INDUSTRY BEST PRACTICES TO IDENTIFY AND HIRE BETTER TALENT
Bernd Weiss, International Space University, Germany

IAC-19.E6.IP.3
ATTRACTING MORE INVESTMENT TO SPACE: THE UAE SPACE INVESTMENT PROMOTION PLAN
Naser AlRashedi, UAE Space Agency, United Arab Emirates

IAC-19.E6.IP.4
THE PRELIMINARY CONCEPT OF COMMERCIAL LAUNCH SERVICE PROVIDER ALLIANCES
YAWEI XU, LandSpace Technology Ltd, China

IAC-19.E6.IP.5
ROLE OF INSURANCE IN MITIGATION RISK IN SPACE OPERATIONS - FOCUSING PARTICULARLY ON NEWSPACE
Helen Tung, Moon Village Association (MVA), United Arab Emirates

E7. IISL COLLOQUIUM ON THE LAW OF OUTER SPACE

Coordinator(s): Lesley Jane Smith, Leuphana University of Lüneburg/Weber-Steinhaus & Smith, Germany; Catherine Doldirina, International Institute of Space Law (IISL), Italy; Diane Howard, International Institute of Space Law (IISL), United States;

E7.1. Dr. Jasentuliyana Keynote lecture by a leading space law expert and IISL Young Scholars session

October 22 2019, 09:45 — 152A

Co-Chair(s): Kai-Uwe Schrogl, European Space Agency (ESA),

France; Sumara Thompson-King, National Aeronautics and Space Administration (NASA), United States;
Rapporteur(s): Rafael Moro Aguilar, Orbspace Engineering, Spain;

IAC-19.E7.1.1
KEYNOTE: INTERNATIONAL COOPERATION MECHANISMS IN OUTER SPACE ACTIVITIES FOR THE NEXT DECADE
Setsuko Aoki, Keio University, Japan

IAC-19.E7.1.2
THE IMPORTANCE OF AN INTERNATIONAL FUNDING MECHANISM FOR ACTIVE DEBRIS REMOVAL IN LEO
Claudiu Mihai Taiatu, International Institute of Air and Space Law, Leiden University, The Netherlands

IAC-19.E7.1.3
DIVIDING HEAVEN - EFFECTS OF THE WOLF AMENDMENT ON THE DEVELOPING SYSTEM OF GLOBAL SPACE GOVERNANCE
Robert Ronci, Canada

IAC-19.E7.1.4
THE ROLE OF INTERNATIONAL TERRITORIAL ADMINISTRATION IN (SEMI)PERMANENT LUNAR PRESENCE
Matija Rencelj, ESA - European Space Agency, Slovenia

IAC-19.E7.1.5
THE PLIGHT OF VALINOR: A REALIST'S APPROACH TO THE DEVELOPMENT OF SPACE LAW IN FUTURE MARS COLONIAL SOCIETY
Yvonne Vastaroucha, National and Kapodistrian University Of Athens, Greece

IAC-19.E7.1.6
A TREATY OF MANY MINDS: AN IN-DEPTH LOOK AT THE TRAVAUX PRÉPARATOIRES OF THE PRINCIPLES DECLARATION OF 1963
Howard Chang, Georgetown University Law Center, United States

IAC-19.E7.1.7
ON-ORBIT SERVICING: REPAIRING, REFUELLING AND RECYCLING THE LEGAL FRAMEWORK
Thea Dethlefsen, Leiden University, Denmark

IAC-19.E7.1.8
THE MOON AGREEMENT AFTER 35 YEARS OF ITS ENTRY INTO FORCE
João Marques de Azevedo, Portugal

IAC-19.E7.1.9
SPACE MINING AND ENVIRONMENTAL PROTECTION: RECYCLING INTERNATIONAL AGREEMENTS INTO NEW LEGAL PRACTICES
Gabrielle Leterre, University of Luxembourg, Luxembourg

IAC-19.E7.1.10
PLAYING DEFENSE: STATES' RIGHT TO SELF-DEFENSE IN SPACE
Jinyoung Choi, Leiden University, The Netherlands

IAC-19.E7.1.11
SPACE OBJECTS AS OCEAN'S WRECKS
Eloi Petros, IDEST, University Paris Sud, France

IAC-19.E7.1.12
ANALYZING THE LEGALITY OF MILITARY USE OF RESOURCES EXTRACTED FROM THE MOON UNDER THE OUTER SPACE TREATY
Tejas Bharadwaj, University of Petroleum and Energy Studies, India

IAC-19.E7.1.13
THE DOCUMENTATION OF HUMAN RIGHTS VIOLATIONS BY SATELLITES: THE SATELLITE SENTINEL PROJECT
Ingrid Oliveira, Catholic University of Santos, Brazil

E7.2. Dispute Settlement in Space Law: Are We Ready for the Commercial Challenge?

October 22 2019, 14:45 — 152A

Co-Chair(s): Chuck Dickey, United States; Gerardine Goh, Iran-United States Claims Tribunal, Singapore, Republic of;
Rapporteur(s): Gina Petrovici, ECSL, Germany;

IAC-19.E7.2.1
THE SUBJECTS OF INTERNATIONAL SPACE LAW
Ram S. Jakhu, McGill Univeristy, Canada

IAC-19.E7.2.2
DISPUTES IN SATELLITE COMMUNICATIONS: SETTLEMENT MECHANISMS AVAILABLE FOR BREACH OF COORDINATION AGREEMENTS
Elina Morozova, Intersputnik International Organization of Space Communications, Russian Federation

IAC-19.E7.2.3
ARBITRATION IN SPACE-RELATED DISPUTES: A SURVEY OF INDUSTRY PRACTICES AND FUTURE NEEDS
Eytan Tepper, Institute of Air and Space Law, McGill University, Canada

IAC-19.E7.2.4
RESOLUTION OF DISPUTES REGARDING INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS RELATED TO SPACE ACTIVITIES
Catherine Doldirina, International Institute of Space Law (IISL), Italy

IAC-19.E7.2.5
IMMUNITY, EXCLUSIVE COMPETENCE CLAUSES AND TORTS: DOES THE EU LEGAL FRAMEWORK ALLOW THE EFFECTIVE ENFORCEMENT OF LAW IN THE COMMERCIAL ERA OF SPACE ACTIVITIES?
Maria Elena De Maestri, Università degli Studi di Genova, Italy

IAC-19.E7.2.6
SPACE COURTS: DO WE NEED A NEW DISPUTE SETTLEMENT BODY?
Stacey Henderson, The University of Adelaide, Australia

IAC-19.E7.2.7
PROS AND CONS OF FUTURE PROBLEMS IN OUTER SPACE DISPUTE SETTLEMENT
Irina Chernykh, Peoples' Friendship University of Russia (RUDN University), Russian Federation

IAC-19.E7.2.8
ALTERNATIVE DISPUTE RESOLUTION FOR SPACE PROSPECTORS
Austin Murnane, United States

IAC-19.E7.2.9
DISPUTE SETTLEMENT IN RELATION TO THE SCARCE ORBIT-SPECTRUM RESOURCE – 'PREVENTIVE' AND 'REACTIVE' ITU PROCEDURES AND THEIR RELEVANCE FOR PRIVATE SECTOR ACTORS
Simona Spassova, University of Luxembourg, Luxembourg

IAC-19.E7.2.10
HARMONISATION OF LIABILITY LITIGATION- LESSONS TO BE LEARNT FROM THE WARSAW CONVENTION
Melanie Maurer, Karl Franzens Universität Graz, Austria

IAC-19.E7.2.11
ARTICLE VI OUTER SPACE TREATY AS A GATEWAY TO EXTENDING STATE IMMUNITY BEFORE DOMESTIC COURTS TO NON-GOVERNMENTAL SPACE OPERATORS
Michael Friedl, University of Vienna, Austria

IAC-19.E7.2.12
UP IN SPACE AND DOWN ON EARTH: A REVISIT TO POTENTIAL DISPUTES OVER CONTRACTUAL LIABILITY REGARDING MISHAPS IN COMMERCIAL SPACE ACTIVITIES
Kang Duan, China Great Wall Industry Corporation (CGWIC), China

E7.3. National Space Legislation – Harmonisation and Enforcement

October 23 2019, 09:45 — 152A

Co-Chair(s): Ranjana Kaul, Dua Associates, India; Frans von der

Dunk, University of Nebraska-Lincoln, The Netherlands;
Rapporteur(s): Scott Parry, United States;

IAC-19.E7.3.1
THE FRAGMENTATION OF INTERNATIONAL SPACE LAW
Vincent Seffinga, The Netherlands

IAC-19.E7.3.2
SCOPING NATIONAL SPACE LAW: THE TRUE MEANING OF 'NATIONAL ACTIVITIES IN OUTER SPACE' OF ARTICLE VI OF THE OUTER SPACE TREATY
Frans von der Dunk, University of Nebraska-Lincoln, The Netherlands

IAC-19.E7.3.3
WHAT LEVEL OF DETAIL IN NATIONAL SPACE LEGISLATION IS IDEAL FOR THE HARMONIZATION AND ENFORCEMENT OF SUCH LEGISLATION AND INTERNATIONAL SPACE LAW?
Matthew Schaefer, University of Nebraska, College of Law, United States

IAC-19.E7.3.4
EMERGING PROVISIONS OF DOMESTIC SPACE LAW
Joel Lisk, University of Adelaide, Australia

IAC-19.E7.3.5
THE ROLE OF INTERGOVERNMENTAL ORGANISATIONS IN ASSISTING THE DEVELOPMENT AND IMPLEMENTATION OF NATIONAL SPACE LAW: AN EXPLORATION OF THE RATIONALE, MANDATE AND LIMITS AS EXEMPLIFIED BY THE EUROPEAN SPACE AGENCY
Marco Ferrazzani, European Space Agency (ESA), France

IAC-19.E7.3.6
EMERGING ECONOMIES' CONTRIBUTIONS TO SPACE ACTIVITIES AND LEGISLATION
Sylvia Ospina, S. Ospina & Associates - Consultants, United States

IAC-19.E7.3.7 (withdrawn)
NATIONAL LEGISLATION FOR SPACE ACTIVITIES IN THE SPACE EMERGING COUNTRIES THE CASE OF THE UNITED ARAB EMIRATES
Mohamed Amara, UAE Space Agency, United Arab Emirates

IAC-19.E7.3.8
SPACE LEGISLATION OF LUXEMBOURG
Mahulena Hofmann, University of Luxembourg, Luxembourg

IAC-19.E7.3.9
THE SPACE INDUSTRY ACT 2018: UNLOCKING THE UK SPACE ECONOMY?
Christopher Newman, Northumbria University, United Kingdom

IAC-19.E7.3.10
INDIA'S NATIONAL SPACE BILL– DOES IT NEED A HOLISTIC TOUCH?
Sridhara Murthi K. R., Jain University, India

IAC-19.E7.3.11 (withdrawn)
TO SHAPE NATIONAL SPACE LAW IN THE CONTEXT OF IMPLEMENTING THE MILITARY-CIVILIAN INTEGRATION STRATEGY IN CHINA
Mingyan Nie, Faculty of Law, Nanjing University of Aeronautics and Astronautics, China

IAC-19.E7.3.12
NATIONAL SPACE LEGISLATIONS CHALLENGED BY ON-ORBIT SERVICES IN THE CONTEXT OF NEW SPACE. LIMITS, CURRENT SOLUTIONS AND INTERNATIONAL PERSPECTIVES
Philippe Clerc, Centre National d'Etudes Spatiales (CNES), France

IAC-19.E7.3.13
INVESTMENT PROTECTION PROVISIONS IN NATIONAL LEGISLATION AND THEIR POTENTIAL TO ENSURE LONG-TERM COMPLIANCE OF NATIONAL SPACE LEGISLATION WITH THE PRINCIPLES OF INTERNATIONAL LAW, PARTICULARLY INTERNATIONAL SPACE LAW
Martin Svec, Charles University, Czech Republic

IAC-19.E7.3.14
WHEN SPACE LIABILITY IN THE SPACE TREATIES TRICKLES DOWN TO NATIONAL SPACE LEGISLATION
Kang Duan, China Great Wall Industry Corporation (CGWIC), China

IAC-19.E7.3.15
THIRD PARTY LIABILITY IN CROSS-BORDER SPACE BUSINESS: A COMPARATIVE RISK ASSESSMENT FOR SPACE COMPANIES AND LEGAL PRACTITIONERS
Masaya Uchino, Japan

IAC-19.E7.3.16
LEGAL BASIS FOR A STATE'S USE OF POLICE POWER AGAINST NON-NATIONALS TO ENFORCE ITS NATIONAL SPACE LEGISLATION AND RESPONSIBILITIES IMPOSED BY THE OUTER SPACE TREATY
George Anthony Long, United States

IAC-19.E7.3.17
A TALE OF TWO SPACE AUTHORITIES: THE INTERPLAY BETWEEN NASA AND THE NATIONAL SPACE COUNCIL
Jessica Deihl, NASA, United States

E7.4. Space Traffic Management: From Space Situational Awareness and Space Surveillance and Tracking to developing Rules of the Road

October 23 2019, 14:45 — 152A

Co-Chair(s): Diane Howard, International Institute of Space Law (IISL), United States; Alexander Soucek, Austrian Space Forum, Austria;
Rapporteur(s): Olga Stelmakh-Drescher, International Institute of Space Commerce, United States;

IAC-19.E7.4.1
MILITARY INFLUENCE ON INTERNATIONAL REGIME-MAKING FOR SPACE TRAFFIC MANAGEMENT
Quentin Verspieren, University of Tokyo, Japan

IAC-19.E7.4.2
SPACE TRAFFIC MANAGEMENT: NOT JUST AIR TRAFFIC MANAGEMENT FOR OUTER SPACE AND MORE THAN DATA ANALYTICS
Stefan A. Kaiser, Germany

IAC-19.E7.4.3
FURTHER OUT: KEEPING TRACK OF DEEP SPACE OBJECTS
Jonathan McDowell, Harvard-Smithsonian Center for Astrophysics (CfA), United States

IAC-19.E7.4.4
EARTH, SOLAR AND LUNAR LAGRANGIAN POINT MANAGEMENT IN THE MITIGATION OF ANTI-COMPETITIVE CONDUCT AND MANAGEMENT OF NATURAL MONOPOLIES IN COMMERCIAL SPACE ACTIVITIES
Thomas Green, Space Industry Association of Australia, Australia

IAC-19.E7.4.5
SPACE TRAFFIC MANAGEMENT IMPLEMENTATION ROADMAPS AND REGULATORY ARCHETYPES THAT BEST SERVE THEM
Melissa Kemper Force, Spaceport America, United States

IAC-19.E7.4.6 (withdrawn)
IMPLEMENTING STATE RESPONSIBILITY FOR SPACE SITUATIONAL AWARENESS: TOWARDS PROTECTING SPACE ENVIRONMENT
Upasana Dasgupta, Institute of Air and Space Law, McGill University, Canada

IAC-19.E7.4.7
IGNITIONS FOR GLOBAL STM RULE-MAKING PROCESS – LEGAL PERSPECTIVES WHY OPERATORS HAVE TO TAKE INITIATIVES
Yu Takeuchi, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.E7.4.8
NEW STANDARDS FOR AN OLD PROBLEM: DOMESTIC LAW & REGULATION TAKES ON STM
Michael Dodge, University of North Dakota, United States

IAC-19.E7.4.9
COMPARATIVE ANALYSIS OF SELECTED EUROPEAN MEMBER STATES ON CIVIL-MILITARY COOPERATION FOR THE ESTABLISHMENT OF SPACE TRAFFIC MANAGEMENT IN EUROPE
Ntorina Antoni, Eindhoven University of Technology, The Netherlands

IAC-19.E7.4.10
ESTABLISHING AN INTERNATIONAL REGIME OF SPACE TRAFFIC MANAGEMENT: A CHINESE PERSPECTIVE
Kuan Yang, Beijing Institute of Technology, Institute of Space Law, China

IAC-19.E7.4.11
APPLYING SPACE TRAFFIC MANAGEMENT IN POLICY& REGULATORY DESIGN
Fatheya Al Shareji, UAE Space Agency, United Arab Emirates

IAC-19.E7.4.12
ORBITAL DEBRIS REMEDIATION: A PRACTICAL MODEL ("THREE COUNTRY-TRUSTED BROKER")
Chuck Dickey, United States

IAC-19.E7.4.13
SHOWING OUR HAND: THE CASE FOR OPEN SSA DATA
PJ Blount, University of Luxembourg, Luxembourg

E7.5. Space Mining: National Authority? International Authority? Both?

October 25 2019, 09:45 — 152A

Co-Chair(s): Ulrike M. Bohlmann, ESA, France; Fabio Tronchetti, Beihang University (BUAA), China;
Rapporteur(s): Thomas Cheney, Northumbria University, United Kingdom;

IAC-19.E7.5.1
THE 40TH ANNIVERSARY OF THE MOON AGREEMENT: TIME FOR REFLECTION
Fabio Tronchetti, Beihang University (BUAA), China

IAC-19.E7.5.2
REVIEWING THE MOON AGREEMENT OR AMENDING THE OUTER SPACE TREATY – VIEWS OF UNCOPUOS MEMBER STATES
Irmgard Marboe, University of Vienna, Austria

IAC-19.E7.5.3
AN INTERNATIONAL REGISTRY AND REGISTRAR FOR PRIORITY RIGHTS TO EXTRACT RESOURCES ON CELESTIAL BODIES
Mark Sundahl, Cleveland State University, United States

IAC-19.E7.5.4
GET YOUR HANDS OFF MY ASTEROID: PRIORITY AND SECURITY IN SPACE RESOURCES
Daniel Porras, United Nations, Switzerland

IAC-19.E7.5.5
THE CASE FOR AN INTERNATIONAL REGISTRY OF SPACE RESOURCE ACTIVITIES: CURRENT PERSPECTIVES
OLAVO DE OLIVEIRA BITTENCOURT NETO, Catholic University of Santos, Brazil

IAC-19.E7.5.6
SPACE MINING: ACCOUNTING FOR NATIONAL ACTIVITIES IN INTERNATIONAL REGULATION THROUGH THE DELINEATION BETWEEN NATIONAL AND INTERNATIONAL JURISDICTION
Rada Popova, Institute of Air and Space Law, University of Cologne, Germany

IAC-19.E7.5.7
MULTILATERAL AGREEMENTS FOR REAL PROPERTY RIGHTS IN THE SOLAR SYSTEM
Rand Simberg, United States

IAC-19.E7.5.8
THE IMPACT OF PLANETARY PROTECTION IN PROVIDING AN APPROPRIATE LEGAL FRAMEWORK FOR SPACE MINING
George Kyriakopoulos, National and Kapodistrian University Of Athens, Greece

IAC-19.E7.5.9
REGULATION OF COMMERCIAL MINING OF SPACE RESOURCES ON CELESTIAL BODIES AT NATIONAL AND INTERNATIONAL LEVEL: AN ANALYSIS OF THE 1979 MOON AGREEMENT AND THE NATIONAL LAW APPROACH
Vinicius Aloia, University of Helsinki, Finland

IAC-19.E7.5.10
PRESCRIBING THE BEST MEDICINE FOR THE STRUGGLING SPACE MINING INDUSTRY: AN INTERNATIONAL REGULATORY AGENCY OR TECHNOLOGY DEVELOPMENT CENTERS?
Michael Weinhoffer, Embry-Riddle Aeronautical University, United States

IAC-19.E7.5.11 (withdrawn)
AN EXTRA-TERRESTRIAL 'GOLD RUSH': A FRAMEWORK BASED ON NATIONAL LAWS, INTERNATIONAL LEGAL DEVELOPMENTS AND A DOSE OF FUTURES IMAGINATION
Anton Alberts, Parliament of the Republic of South Africa, South Africa

IAC-19.E7.5.12
SPACE MINING: THE NEED FOR INTERNATIONAL GLOBAL GOVERNANCE
Ermanno Napolitano, McGill Univeristy, Canada

E7.7. Remediation of Space Debris: A Fundamental Legal Challenge?

October 25 2019, 13:30 — 152A

Co-Chair(s): Philip De Man, Catholic University of Louvain, Belgium; Lesley Jane Smith, Leuphana University of Lüneburg/ Weber-Steinhaus & Smith, Germany;
Rapporteur(s): Omar Saal, [unlisted], The Netherlands;

IAC-19.E7.7.1
SPACE DEBRIS: BETWEEN UNITY AND FRAGMENTATION – RISK AS A STATIC PRINCIPLE WITH DYNAMIC OUTCOMES
Ward Munters, KU Leuven, Belgium

IAC-19.E7.7.2
OUT INTO THE DARK: REMOVING SPACE DEBRIS FROM THE GEOSTATIONARY ORBIT
Martha Mejia-Kaiser, Independent Researcher, Germany

IAC-19.E7.7.3 (withdrawn)
SUGGESTIONS FOR A FRAMEWORK FOR PROSPECTIVE LEGAL AND TECHNOLOGICAL INTERVENTIONS WITH REGARD TO SPACE DEBRIS AS A PATH TO A RESOLUTION TO THE PROBLEMATIQUE.
Anton Alberts, Parliament of the Republic of South Africa, South Africa

IAC-19.E7.7.4
THE PATH TO ESTABLISHING AN EFFECTIVE FRAMEWORK FOR SPACE DEBRIS REMEDIATION ON THE BASIS OF MITIGATION: LEGAL PROPOSALS RESULTING FROM THE TECHNICAL RESULTS OF THE REDSHIFT PROJECT
Rada Popova, Institute of Air and Space Law, University of Cologne, Germany

IAC-19.E7.7.5
SPACE DEBRIS REMEDIATION BY ESTABLISHING A NEW CIVIL STRUCTURE AND REGULATIONS FOR SPACE ACTIVITIES
Hamid Kazemi, Aerospace Research Institute, Ministry of Science, Research and Technology, Iran

IAC-19.E7.7.6
PROPOSAL OF GOVERNMENTAL COMPENSATION FOR DAMAGES IN ORBITAL ACTIVITIES ESPECIALLY FOR SPACE DEBRIS REMOVAL
Mihoko Shintani, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.E7.7.7 (withdrawn)
APPLICABILITY OF PRECAUTIONARY PRINCIPLE AND PRECAUTIONARY APPROACH RELATING TO SPACE DEBRIS REMEDIATION
Mizuki Tani Hatakenaka, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-19.E7.7.8
THE LAW FOR MORE EFFECTIVE ASSISTANCE, RECONSTRUCTION AND DAMAGE REPAIR IN THE EVENT OF DISASTERS CAUSED BY SPACE OBJECTS OR NATURAL DISASTERS.
Maria de las Mercedes Esquivel de Cocca, Argentina

IAC-19.E7.7.9 (withdrawn)
ON-ORBIT SERVICING/ACTIVE DEBRIS REMOVAL: LEGAL AND INSURANCE CONSIDERATIONS
Ingo Baumann, BHO Legal, Germany

IAC-19.E7.7.10 (withdrawn)
REMEDIATION THROUGH USE OF ARTIFICIAL INTELLIGENCE - LEGAL CHALLENGES
Upasana Dasgupta, Institute of Air and Space Law, McGill University, Canada

IAC-19.E7.7.11
THE LEGAL FRAMEWORK FOR SPACE DEBRIS REMEDIATION
Si Yuan, China

E7.IP. Interactive Presentations - IISL COLLOQUIUM ON THE LAW OF OUTER SPACE

October 24 2019, 13:15 — IP Area

Co-Chair(s): Lesley Jane Smith, Leuphana University of Lüneburg/Weber-Steinhaus & Smith, Germany; Catherine Doldirina, International Institute of Space Law (IISL), Italy;

IAC-19.E7.IP.1 (withdrawn)
PROMOTING TRANSFORMATION THROUGHOUT THE SPACE MINING CYCLE.
Rhonda O'Sullivan, University of Queensland, Australia

IAC-19.E7.IP.2
CLOSED FOR OPERATIONS: NON-INTERFERENCE ZONES AND THE CADENCE OF THE NEW SPACE RACE
Christopher Hearsey, The Space Court Foundation Inc., United States

IAC-19.E7.IP.3
DOES SPACE START AT 80 KM? REVISITING THE KARMAN LINE
Jonathan McDowell, Harvard-Smithsonian Center for Astrophysics (CfA), United States

IAC-19.E7.IP.4
RE-DISCOVERING THE BOUNDARY PROBLEM
Kyran Grattan, International Institute of Air and Space Law, Leiden University, The Netherlands

IAC-19.E7.IP.5
GENERAL DATA PROTECTION REGULATION OF THE EUROPEAN UNION——A NEW CHALLENGE FOR THE FRAMEWORK OF WTO
Xiaoya Lin, China Great Wall Industry Corporation (CGWIC), China

IAC-19.E7.IP.6
SMALL SATELLITES AND REGULATION: A GENERAL OVERVIEW WITH A SPECIFIC REFERENCE TO THE ITALIAN CONTEXT.
Marina Gagliardi, Italian Space Agency (ASI), Italy

IAC-19.E7.IP.7
THE NEW-SPACE LAW: THE UAE SPACE LEGISLATION APPROACH TO ENABLE SPACE PRIVATIZATION AND LONG-TERM SUSTAINABILITY
Naser AlRashedi, UAE Space Agency, United Arab Emirates

IAC-19.E7.IP.8
THE SPACE DEVELOPMENT IN ASIA: ANALYSIS OF REGIONAL SPACE ORGANIZATIONS
Shripad JAGDALE, India

IAC-19.E7.IP.9
BRAZIL AND USA: THE TECHNOLOGY SAFEGUARD AGREEMENT TO OPEN ALCANTARA LAUNCH CENTER TO THE GLOBAL MARKET
Ana Cristina Galhego Rosa, Germany

IAC-19.E7.IP.10
THE ISSUES OF KEY CONCERN REGARDING SPACE MINING: REVISIT OF THE MOON AGREEMENT FROM THE CHINESE PERSPECTIVE
Kuan Yang, Beijing Institute of Technology, Institute of Space Law, China

IAC-19.E7.IP.11
RELEVANCE OF MILITARIZED ARTIFICIAL INTELLIGENCE TO SOVEREIGNTY IN SPACE: LEGAL CHALLENGES AND CONFLICTS
Mahshid TalebianKiakalayeh, Iran

IAC-19.E7.IP.12
CRIMINAL LAW APPLIABLE ON SPACE.
Víctor Iván Coello Marcelín, Mexico

IAC-19.E7.IP.13
CAN A NON-FUNCTIONAL FACILITY ON THE MOON BECOME RES NULLIUS AND BE OCCUPIED BY A SUBSEQUENT STATE? ANALYZING THE LIMITATION ON THE STATE JURISDICTION AND OWNERSHIP OVER FACILITIES CONSTRUCTED ON THE MOON.
Tejas Bharadwaj, University of Petroleum and Energy Studies, India

IAC-19.E7.IP.14
TRANSITIONING INTO HIGHER-AIRSPACE TRAFFIC MANAGEMENT (HATM) AND SPACE TRAFFIC MANAGEMENT (STM)
Maarten Adriaensen, Belgium

IAC-19.E7.IP.15
WHO OWNS THIS SPACE? A SURVEY OF SPACE INDUSTRY LEADERS AND LEGAL EXPERTS ASSESSING SPACE PROPERTY RIGHTS ISSUES AND POTENTIAL RESOLUTIONS
Joshua Burks, Auburn University, United States

IAC-19.E7.IP.16 (withdrawn)
NATIONAL MINING REGIMES: AN ANALYSIS OF THEIR NEED AND EFFECTIVENESS FOR SUCCESSFUL AND COMPLIANT SPACE MINING
Helena Correia Mendonça, Vieira de Almeida & Associados, Portugal

IAC-19.E7.IP.17
THE LEGAL HISTORY OF THE BOGOTÁ DECLARATION: CONTESTING THE MEANING OF "HUMANITY" FROM THE GLOBAL SOUTH
Haris Durrani, Columbia Law School, United States

IAC-19.E7.IP.18
OUMUAMUA: APPLYING A MULTI-MESSENGER APPROACH TO FUNDAMENTAL LEGAL AND ETHICAL ISSUES FOR DEVELOPING GOVERNING FRAMEWORKS ON SPACE MINING
Sara Langston, Embry-Riddle Aeronautical University, United States

IAC-19.E7.IP.19
PARTIAL OWNERSHIP FOR OUTER SPACE ECONOMY
Erwan Beauvois, International Master SEEDS, France

IAC-19.E7.IP.20
POTENTIAL DISPUTES ARISING FROM SPACE ACTIVITIES: OPPORTUNITIES FOR INVESTMENT ARBITRATION
Martin Svec, Charles University, Czech Republic

IAC-19.E7.IP.21 (non-confirmed)
THE EXISTENCE OF GAPS IN INTERNATIONAL SPACE LAW LEADS TO MISUNDERSTANDINGS AMONG SPACEFARING COUNTRIES
Ekaterina Ranyuk, Federal Space Agency (ROSCOSMOS), Russian Federation

9 Index of Authors

Status as of September 2018
A = Author CA = Co-author

Name	Role	Paper
A		
A, Shaji	CA	IAC-19.C4.2.3
A R, Rajkumar	CA	IAC-19.C4.5.4
Abarca-Jiménez, Griselda Stephany	CA	IAC-19.C2.8.6
ABBAS, Yasir	A	IAC-19.B4.1.7
Abbattista, Cristoforo	CA	IAC-19.B5.3.4
Abdalla, Hanadi	CA	IAC-19.E1.5.7
Abdelbaki, Rayan	CA	IAC-19.A1.4.12
Abdellatif, Akram	A	IAC-19.D5.1.9
Abdelsalam, Mohamed	CA	IAC-19.A7.2.4
Abdi, Ahmed	CA	IAC-19.E3.IP.2
Abdin, Islam Fouad	CA	IAC-19.D4.5.4
Abdulrahim, Yasser	CA	IAC-19.E1.4.8
Abe, Shuji	CA	IAC-19.A6.2.10
Abel, Elisabeth	CA	IAC-19.C2.4.3
Abel, Elisabeth	A	IAC-19.C2.IP.11
Abel, Elisabeth	CA	IAC-19.D1.5.3
Abello, Elyka	CA	IAC-19.E1.IP.18
Abendschein, Cody	CA	IAC-19.E2.3-GTS.4.7
Abercrombie, Stewart	CA	IAC-19.B3.5.7
Abercromby, Andrew	CA	IAC-19.B3.5.7
Abi Jaoude, Maguy	CA	IAC-19.C2.6.8
Abi-Fadel, Marc	CA	IAC-19.D1.1.5
Abraham, Sanjay	CA	IAC-19.B2.IP.4
Abraham, Sanjay	A	IAC-19.E1.IP.25
Abraham, Sanjay	CA	IAC-19.E1.IP.26
Abrahamsson, Mattias	CA	IAC-19.A2.5.6
Abramovich, Reuven	CA	IAC-19.A5.2.13
Abujami, Issam	CA	IAC-19.A7.2.4
Aburaed, Nour	CA	IAC-19.B1.IP.4
Aburaed, Nour	CA	IAC-19.B1.IP.7
Accomazzo, Andrea	CA	IAC-19.A3.5.2
Acernese, Marco	CA	IAC-19.B2.2.8
Acernese, Marco	CA	IAC-19.E1.3.8
Acernese, Marco	CA	IAC-19.A6.7.9
Acevedo, James	CA	IAC-19.E1.5.4
Adachi, Masaki	CA	IAC-19.C4.3.7
Adachi, Masaki	A	IAC-19.C4.10.11
Adams, Daniel	A	IAC-19.B3.2.9
Adams, Daniel	A	IAC-19.B4.5.6
Adams, Emily	CA	IAC-19.B1.6.2
Adams, Norman	CA	IAC-19.A3.IP.5
Adamson, Iain	CA	IAC-19.A5.1.9
Adebolu, Ibukun	CA	IAC-19.B4.1.20
Adheem, Amna	A	IAC-19.C1.3.8
Adhikari, Rishav	CA	IAC-19.A6.1.3
Adnan, Mohammed	CA	IAC-19.E1.5.5
Adriaensen, Maarten	CA	IAC-19.E6.3.7
Adriaensen, Maarten	A	IAC-19.E7.IP.14
Adriaensen, Maarten	CA	IAC-19.D5.4.7
Adrian, Astrid	CA	IAC-19.A1.7.3
Adrien, Leduque	CA	IAC-19.A1.IP.7
Aeckerlein, Joachim	CA	IAC-19.A1.5.5
Afanasev, Anton	CA	IAC-19.C1.6.9
Afolayan, Esther	CA	IAC-19.A1.4.12
Agapov, Vladimir	A	IAC-19.A6.7.1
Agarwal, Deepak K.	CA	IAC-19.C4.4.7
Agarwal, Shrutika	A	IAC-19.E2.1.2
Agbadi, Mustapha Eleyawa	CA	IAC-19.E3.IP.2
Agbadi, Mustapha Eleyawa	A	IAC-19.E3.IP.3
Agbaje, Ganiyu	A	IAC-19.B1.1.12
Aggarwal, Vishwani	CA	IAC-19.C4.6.9
Aglietti, Guglielmo	CA	IAC-19.C2.1.9
Aglietti, Guglielmo	CA	IAC-19.C2.2.6
Aglietti, Guglielmo	A	IAC-19.A6.5.1
Aglietti, Guglielmo	CA	IAC-19.A6.6.6

Name	Role	Paper
Agrawal, Adarsh	A	IAC-19.A4.2.11
Agrawal, Brij	A	IAC-19.C2.9.6
Agrawal, Nishant	CA	IAC-19.B2.5.10
Agrawal, Vinod	CA	IAC-19.B2.5.9
Agrawal, Vinod Kumar	CA	IAC-19.E2.4.1
Aguado Agelet, Fernando	A	IAC-19.E1.4.11
Aguado Agelet, Fernando	A	IAC-19.B5.2.6
Aguado Agelet, Fernando	CA	IAC-19.B4.IP.4
Aguasca, Albert	CA	IAC-19.B1.2.10
Aguilar, Roberto	CA	IAC-19.B5.2.10
Aguilella, Andrea	CA	IAC-19.B4.6B.3
Aharonson, Oded	CA	IAC-19.A5.2.13
Aheieva, Kateryna	A	IAC-19.B4.4.9
Ahenkora-Duodu, Kingsley	CA	IAC-19.E6.3.2
Ahmad, Naeem	CA	IAC-19.D2.9-D6.2.6
Ahmed, Bello	CA	IAC-19.B5.2.8
Ahmed, Rohaan	CA	IAC-19.D1.3.4
Ahmed, Rohaan	A	IAC-19.D3.IP.4
Ai, Haiping	A	IAC-19.A2.IP.4
Ai, Haiping	A	IAC-19.D1.IP.4
Ainley, Sean	CA	IAC-19.A6.6.9
Aitchison, Lindsay	CA	IAC-19.B3.1.8
Aitier, Elise	CA	IAC-19.A3.4B.8
Ajibuwa, Felix	A	IAC-19.A1.3.12
Aked, Richard	CA	IAC-19.A3.2C.6
Akila Dang, Bitrus	CA	IAC-19.B5.2.8
Akin, David	A	IAC-19.B4.3.13
Akin, David	A	IAC-19.A5.1.11
Akinwale, Abraham	CA	IAC-19.E6.3.2
Akinwale, Abraham	A	IAC-19.B1.IP.10
Akinwale, Abraham	A	IAC-19.D4.IP.10
Akinwale, Abraham	A	IAC-19.E1.IP.4
Akinwale, Abraham	CA	IAC-19.E3.IP.2
Akiyama, Mariko	A	IAC-19.C4.8-B4.5A.3
Al Ars, Zaid	CA	IAC-19.E5.2.7
Al Hajeri, Sumaya	CA	IAC-19.E7.4.11
Al harbi, Mazin	CA	IAC-19.D1.1.5
Al Hashmi, Khaled	CA	IAC-19.E1.5.5
Al Kaissi, Talal	CA	IAC-19.E6.IP.3
Al Mansoori, Saeed	CA	IAC-19.B4.4.7
Al Mansoori, Saeed	A	IAC-19.B1.IP.4
Al Mansoori, Saeed	CA	IAC-19.B1.IP.12
Al Mansoori, Saeed	A	IAC-19.B1.5.11
Al Marar, Abdulla	CA	IAC-19.C2.8.4
Al Naimiy, Hamid	CA	IAC-19.A7.2.4
Al Qasim, Ahlam	A	IAC-19.B4.2.6
Al Rafi, Noora	CA	IAC-19.B3.1.5
Al Rais, Adnan	CA	IAC-19.B4.4.7
Al Romaithi, Maitha	A	IAC-19.E1.IP.17
Al Romaithi, Maitha	A	IAC-19.E5.IP.9
Al Sayegh, Amer	CA	IAC-19.E1.4.8
Al Sayyah, Fatma	CA	IAC-19.B3.1.5
Al Shareji, Fatheya	A	IAC-19.E7.4.11
Al Shareji, Fatheya	CA	IAC-19.B3.8-GTS.2.7
Al Shehi, Noora	CA	IAC-19.B3.1.5
Al Zarouni, Mariam	A	IAC-19.B3.1.5
Al-saad, Mina	CA	IAC-19.B1.IP.4
Al-saad, Mina	CA	IAC-19.B1.IP.7
Alam, Sabrina	A	IAC-19.A7.2.9
AlAmeri, Alia	CA	IAC-19.D3.4.11
Alameri, Noora	A	IAC-19.A3.3A.10
Alarcon, Eduard	CA	IAC-19.B4.3.4
Alarcon, Eduard	CA	IAC-19.B4.IP.34
Alarcón, Eduard	CA	IAC-19.D1.2.5
Alary, Didier	A	IAC-19.E3.4.11
Alavés, Higinio	CA	IAC-19.C3.3.5
AlAydaroos, Fatima	A	IAC-19.E1.5.5

Name	Role	Paper
Albani, Mirko	CA	IAC-19.B1.IP.9
Albano, Marta	CA	IAC-19.D1.1.1
Albano, Marta	CA	IAC-19.C2.6.9
Albano, Marta	CA	IAC-19.D4.IP.11
Albano, Marta	CA	IAC-19.C2.8.2
Albee, Keenan	CA	IAC-19.D1.2.2
Albers, Bram	CA	IAC-19.A7.IP.5
Alberti, Sebastiano	CA	IAC-19.C4.2.11
Alberts, Anton	A	IAC-19.E7.5.11
Alberts, Anton	A	IAC-19.E7.7.3
Albertsen, Nadja	CA	IAC-19.A1.1.9
AlBesher, Shaikha	A	IAC-19.B1.IP.12
AlBesher, Shaikha	CA	IAC-19.B1.5.11
Albino, Vito	CA	IAC-19.D6.3.4
Albracht, Kirsten	CA	IAC-19.A1.4.14
Albuquerque, Glauberto	CA	IAC-19.D2.IP.11
Alcibar Palacios, Julio César	CA	IAC-19.E1.1.9
Alcibiade, Alessandro	CA	IAC-19.E5.IP.5
Aldogom, Deina	CA	IAC-19.B4.4.7
Aldrin, Buzz	CA	IAC-19.B4.8.14
Alegre Cubillo, Alba	CA	IAC-19.D2.3.2
Aleksandrov, Oleg	A	IAC-19.A1.IP.18
Aleksandrov, Oleg	A	IAC-19.A5.IP.8
Aleksandrov, Oleg	A	IAC-19.C4.IP.8
Aleksandrov, Oleg	A	IAC-19.C4.IP.32
Aleksandrov, Oleg	A	IAC-19.D4.IP.2
Alekseenko, Alexander	CA	IAC-19.C4.4.4
Alessandro Dei Tos, Diogene	CA	IAC-19.C1.2.5
Alessi, Elisa Maria	CA	IAC-19.A6.2.5
Alessi, Elisa Maria	A	IAC-19.C1.3.1
Alessi, Elisa Maria	CA	IAC-19.A6.4.6
Alessi, Elisa Maria	CA	IAC-19.C1.4.10
Alessi, Elisa Maria	CA	IAC-19.A6.6.4
Alessi, Elisa Maria	CA	IAC-19.A6.IP.13
Alessi, Elisa Maria	CA	IAC-19.E7.7.4
Alexander, Reginald	CA	IAC-19.D1.4A.3
Alexander, Sasha	A	IAC-19.E1.3.3
Alexandra, Sebastiane	CA	IAC-19.A6.8.11
Alfano, Salvatore	A	IAC-19.A6.2.8
Alfano, Salvatore	CA	IAC-19.A6.2.9
Alfaro, Luis	A	IAC-19.E5.2.12
Alfaro, Luis	A	IAC-19.E6.1.3
Alfonso Sanchez, Elsa	A	IAC-19.E1.2.9
Alford, Amy	CA	IAC-19.B6.IP.4
Alhadhrami, Abdulla	CA	IAC-19.B1.IP.16
Alhadhrami, Saeed	A	IAC-19.B1.IP.16
AlHajeri, Sumaya	A	IAC-19.B3.8-GTS.2.7
AlHajeri, Sumaya	CA	IAC-19.E6.4.10
AlHajeri, Sumaya	A	IAC-19.D3.4.11
Alhameed, Asmaa	A	IAC-19.A7.2.4
Alhashmi, Hamed	A	IAC-19.C3.4.6
Alhazaa, Khaled	CA	IAC-19.E1.4.8
Alhosani, Hamda	CA	IAC-19.E3.1.3
Ali, Anwar	A	IAC-19.A1.8.16
Ali, Anwar	A	IAC-19.E1.9.5
Ali, Hessa	A	IAC-19.A3.3A.8
Ali, Mohammad	CA	IAC-19.C4.5.4
Ali, Nuria	CA	IAC-19.E1.5.7
Aliberti, Marco	CA	IAC-19.E3.4.2
Alifanov, Oleg	CA	IAC-19.C2.7.6
Alifanov, Oleg	CA	IAC-19.C2.8.2
Alifanov, Oleg	CA	IAC-19.C2.8.9
AlJanaahi, Asmaa	A	IAC-19.B1.IP.7
Aljassar, Hala	CA	IAC-19.E1.4.8
Alkarbi, Mohamed	A	IAC-19.B4.9-GTS.5.3
Alkindi, Lolowa	CA	IAC-19.E5.IP.10
Allam, Jeremy	CA	IAC-19.B4.IP.16
Allcorn, Aaron	CA	IAC-19.A1.4.10
Allen, Lily A.	A	IAC-19.A1.8.2
Allen, Samantha	A	IAC-19.A6.3.3
Allen Jr., Joseph	A	IAC-19.A1.IP.12
Allison, James	CA	IAC-19.C1.5.2
Allison, James	CA	IAC-19.C1.IP.4
Allsbrook, Karen	CA	IAC-19.E1.5.10
Allworth, James	A	IAC-19.A6.1.5

Name	Role	Paper
AlMaazmi, Alya	A	IAC-19.B4.4.7
AlMaazmi, Alya	CA	IAC-19.B1.IP.4
AlMaazmi, Alya	CA	IAC-19.B1.IP.12
AlMaazmi, Alya	CA	IAC-19.B1.5.11
AlMannaei, Aisha Sultan	CA	IAC-19.B4.2.6
Almansoori, Salama	A	IAC-19.E1.IP.19
AlMarzouqi, Fatima	CA	IAC-19.B1.IP.12
AlMarzouqi, Fatima	CA	IAC-19.B1.5.11
Almeida Prado, Antonio	CA	IAC-19.C1.4.6
Almeida Prado, Antonio Fernando Bertachini	CA	IAC-19.D4.3.17
AlMheiri, Ammar	CA	IAC-19.B1.IP.7
Almon, Alires	CA	IAC-19.D1.1.3
Almqvist, Marcus	CA	IAC-19.C4.10.12
Aloia, Vinicius	A	IAC-19.E7.5.9
Alonso Ruiz, Alvaro	A	IAC-19.A3.1.8
Alotaibi, Ghanim	A	IAC-19.E1.4.8
Alotaibi, Ghanim	A	IAC-19.E3.2.7
Alpiste, Francesc	CA	IAC-19.A2.3.5
AlRashedi, Naser	A	IAC-19.D4.2.2
Alrashedi, Naser	CA	IAC-19.E3.1.2
Alrashedi, Naser	CA	IAC-19.E7.4.11
AlRashedi, Naser	A	IAC-19.E6.IP.3
AlRashedi, Naser	A	IAC-19.E7.IP.7
Alrashedi, Naser	CA	IAC-19.B3.8-GTS.2.7
Alrashedi, Naser	CA	IAC-19.E6.4.10
Alrukaibi, Duaij	CA	IAC-19.E1.4.8
Alsarraf, Hussain	CA	IAC-19.E1.4.8
Alsenafi, Fahad	CA	IAC-19.E1.4.8
AlShahei, Yousef	CA	IAC-19.C2.8.4
AlShamsi, Fatima	CA	IAC-19.D4.2.2
AlShamsi, Fatima	A	IAC-19.E3.1.2
AlShamsi, Fatima	A	IAC-19.E6.4.10
AlShamsi, Fatima	CA	IAC-19.D3.4.11
AlShamsi, Meera	CA	IAC-19.B4.4.7
AlShamsi, Meera	CA	IAC-19.B1.IP.4
AlShamsi, Meera	CA	IAC-19.B1.IP.12
AlShamsi, Meera	CA	IAC-19.B1.5.11
Alshehhi, Abdulla	A	IAC-19.C2.8.4
AlShehhi, Hamda	CA	IAC-19.E1.5.6
AlShehhi, Hamda	A	IAC-19.C2.6.8
AlSuwaidi, Ayesha	CA	IAC-19.B3.1.5
AlSuwaidi, Khalid	CA	IAC-19.B1.IP.7
Alvarado Briceño, Carlos	CA	IAC-19.B4.1.13
Alvarado Briceño, Carlos	CA	IAC-19.E5.4.2
Alvarenga dos Santos, Marcia	CA	IAC-19.D4.5.11
Alvarez, Manuel	A	IAC-19.A1.IP.16
Alvarez, Tamara	A	IAC-19.E5.2.2
Alvarez, Tamara	CA	IAC-19.D4.5.11
Alvarez-Salazar, Oscar	CA	IAC-19.C1.5.2
Alves, Ivo	CA	IAC-19.C4.9.8
Alyammahi, Ahmed	A	IAC-19.B4.9-GTS.5.13
Amadio, Diego	CA	IAC-19.B4.1.9
Amadio, Diego	CA	IAC-19.B2.2.8
Amadio, Diego	CA	IAC-19.E1.3.8
Amadio, Diego	CA	IAC-19.B2.4.8
Amadio, Diego	CA	IAC-19.E2.4.6
Amadio, Diego	CA	IAC-19.A6.10-B4.10.2
Amara, Mohamed	A	IAC-19.E7.3.7
Amaral Silva, Wagner Kim	A	IAC-19.C4.IP.20
Ambrose, Leslie	CA	IAC-19.B2.7.10
Ambrosi, Richard	CA	IAC-19.C3.5-C4.7.2
Ambrosi, Richard	A	IAC-19.C3.5-C4.7.11
Ambrosio, Ana Maria	CA	IAC-19.B6.1.12
Amend, Oliver	CA	IAC-19.E1.1.6
Americano Brandão, Adolfo	CA	IAC-19.D1.5.7
Amin, Amel	CA	IAC-19.B3.1.5
Amini, Rashied	CA	IAC-19.B6.3.8
Amoroso, Marilena	A	IAC-19.B4.2.8
Amoroso, Marilena	CA	IAC-19.B4.8.8
Amoruso, Leonardo	CA	IAC-19.B5.3.4
Amrutkar, Rushanka	CA	IAC-19.B1.1.11
Amzajerdian, Farzin	CA	IAC-19.A3.2B.2
An, Hyoung Joon	A	IAC-19.E4.2.8
Anandapadmanaban, Eswar	A	IAC-19.B3.5.6

Name	Role	Paper
Anandito, Akhsanto	A	IAC-19.A1.3.11
Anantwar, Prathmesh	CA	IAC-19.E1.1.3
Anastas, Nicholas	CA	IAC-19.B3.5.6
Anastasakis, Konstantinos	CA	IAC-19.B3.8-GTS.2.6
Anatoly, Shapovalov	CA	IAC-19.E2.4.5
Anatychuk, L.I.	CA	IAC-19.A1.IP.11
Anciaux, Michel	CA	IAC-19.B4.2.13
Anderegg, Andy	A	IAC-19.D6.1.6
Anderson, Allison	CA	IAC-19.A1.IP.4
Anderson, Eric	CA	IAC-19.B1.6.2
Anderson, John	CA	IAC-19.D5.3.12
Anderson, Kevin	A	IAC-19.B2.6.5
Anderson, Rodney	CA	IAC-19.C1.4.9
Anderson, Stanley	A	IAC-19.E4.3.2
Anderson, William	CA	IAC-19.C4.10.9
Andersson, Clas	CA	IAC-19.C2.5.11
Andersson, Clas	CA	IAC-19.C4.10.2
Andiappane, Sabrina	A	IAC-19.D3.1.10
Andiappane, Sabrina	A	IAC-19.D3.2B.2
Ando, Akira	CA	IAC-19.C4.4.1
Andrade, Jonathan	CA	IAC-19.E7.1.13
Andrade de Almeida, Fabio	CA	IAC-19.D2.IP.11
Andrea, Christina-Sylvia	CA	IAC-19.A1.IP.2
Andrenucci, Mariano	CA	IAC-19.D4.1.8
Andrenucci, Mariano	CA	IAC-19.C4.4.6
Andreussi, Tommaso	CA	IAC-19.D4.1.8
Andreussi, Tommaso	A	IAC-19.C4.4.6
Andreussi, Tommaso	CA	IAC-19.C4.6.5
Andreussi, Tommaso	CA	IAC-19.C4.IP.33
Andrews, Shaun	A	IAC-19.C4.5.1
Andrianov, Artem	CA	IAC-19.C4.3.8
Andrijauskaite, Kristina	CA	IAC-19.A2.7.14
Angeletti, Federica	A	IAC-19.C2.3.6
Angerer, Oliver	CA	IAC-19.A1.7.3
Angert, Matthew	CA	IAC-19.B2.7.1
Angevain, Jean-Christophe	CA	IAC-19.B2.3.3
Angkasa, Krisjani	CA	IAC-19.B4.8.5
Aniakou, Ursula	CA	IAC-19.D5.1.4
Aniakou, Ursula	CA	IAC-19.A6.8.1
Anih, Samuel	A	IAC-19.B3.7.8
ANNALORO, Julien	A	IAC-19.A6.4.10
Annen, Jitka	CA	IAC-19.A1.2.4
Annenkova, Anastasiya	CA	IAC-19.C1.6.9
Annus, Krisztina	CA	IAC-19.A7.IP.4
Ansalone, Luigi	CA	IAC-19.B1.3.2
Anselmo, Luciano	CA	IAC-19.A6.4.5
Anselmo, Luciano	CA	IAC-19.A6.7.9
Antara, Raihana Shams Islam	A	IAC-19.B4.IP.31
Antonetti, Stefano	A	IAC-19.B4.5.8
Antoni, Ntorina	CA	IAC-19.E6.2.5
Antoni, Ntorina	A	IAC-19.E7.4.9
Antoni, Ntorina	A	IAC-19.E6.3.6
Antonietti, Nicolo	CA	IAC-19.A4.2.7
Antonietti, Nicolò	CA	IAC-19.A4.1.11
Antonietti, Nicolò	A	IAC-19.A4.1.12
Antropova, Evgenya	CA	IAC-19.A1.4.13
Antti, Marta-Lena	CA	IAC-19.E6.1.4
Anzalone, Evan	A	IAC-19.A3.2C.5
Anzalone, Evan	A	IAC-19.D2.9-D6.2.6
Aoki, Setsuko	A	IAC-19.E7.1.1
Aoki, Yoshio	CA	IAC-19.D4.3.11
Aoki, Yoshio	CA	IAC-19.D4.3.14
Aorpimai, Manop	A	IAC-19.B1.1.9
Aorpimai, Manop	CA	IAC-19.B1.1.9
Aoyama, Tomoki	CA	IAC-19.A1.3.4
Apathy, Istvan	CA	IAC-19.A1.5.3
Aponte, Jose	CA	IAC-19.E1.IP.18
Appadoo, Kevin	CA	IAC-19.E1.5.7
Appolloni, Matteo	CA	IAC-19.C2.1.9
Aprea, Julio	A	IAC-19.D2.1.5
Aprea, Julio	A	IAC-19.B4.5.10
Aragay Verdeny, Monica	CA	IAC-19.B4.6B.10
Araguas Rodriguez, Silvia	CA	IAC-19.C2.IP.15
Araguz, Carles	CA	IAC-19.D1.2.5
Araguz, Carles	A	IAC-19.B4.3.4

Name	Role	Paper
Araguz, Carles	A	IAC-19.B4.IP.34
Arantes Silva, Claudia	A	IAC-19.B1.5.7
Arasu, Yezhil	CA	IAC-19.C2.1.12
Araya Chacón, Carmen Valentina	CA	IAC-19.E1.3.4
Araya Gamboa, Emmanuel	CA	IAC-19.E1.5.9
Ardan-Ejarque, Anais	CA	IAC-19.D3.2B.4
Arevalo, Gerardo	CA	IAC-19.A7.2.7
AREZKI, Faiza	CA	IAC-19.B4.4.10
Arghir, Mihaï	CA	IAC-19.C4.10.1
Argrow, Brian	CA	IAC-19.D2.3.1
Arias-Acuña, Marcos	CA	IAC-19.E1.4.11
Aridon, Gwenaëlle	CA	IAC-19.D3.2B.4
Aristotelis, Sebastian	CA	IAC-19.E5.1A.6
Arita, Shoko	CA	IAC-19.D4.3.10
Armellin, Roberto	CA	IAC-19.C1.3.5
Armitage, Scott	CA	IAC-19.C4.8-B4.5A.8
Armstrong, Jason	A	IAC-19.B4.5.13
Armstrong, Jason	A	IAC-19.A1.6.4
Arnett, Chad	CA	IAC-19.D1.3.6
Arney, Dale	CA	IAC-19.D3.2A.6
Arney, Dale	CA	IAC-19.D3.2A.10
Arney, Dale	A	IAC-19.D3.4.9
Arnhof, Marlies	CA	IAC-19.D4.1.2
Arnold, Steven	CA	IAC-19.E1.6.5
Arodudu, Oludunsin Tunrayo	CA	IAC-19.B5.2.8
Arpesi, Pier Giorgio	CA	IAC-19.B2.4.2
Arrat, Denis	CA	IAC-19.A3.4B.8
Arrigo, Gabriella	CA	IAC-19.E3.1.11
Arteaga Aleman, Manuel Alejandro	CA	IAC-19.D2.7.4
Arthurs, Richard	CA	IAC-19.A1.4.6
Artiglia, Massimo	CA	IAC-19.B2.2.4
Artola, Laurent	CA	IAC-19.D5.3.8
Arya, Vishala	A	IAC-19.C1.2.8
Arzoumanian, Zaven	CA	IAC-19.B3.4-B6.4.2
Asaki, Kyosuke	A	IAC-19.C1.1.1
Asami, Kenichi	CA	IAC-19.B4.1.7
Asami, Kenichi	CA	IAC-19.D1.3.2
Ashari, Neeki	A	IAC-19.A1.2.7
Ashcroft, Eric	CA	IAC-19.B1.6.4
Ashford, Edward W.	CA	IAC-19.B1.3.4
Ashford, Edward W.	CA	IAC-19.B4.9-GTS.5.12
Ashford, Edward W.	CA	IAC-19.B2.7.8
Ashman, Benjamin	CA	IAC-19.A3.IP.19
Ashman, Benjamin	CA	IAC-19.A3.2C.5
Ashmore, Matthew	CA	IAC-19.D1.6.1
Ashrafi, Behnam	CA	IAC-19.C2.8.1
Asiyanbola, Oyedamola	A	IAC-19.E6.3.2
Asla, Mariano	CA	IAC-19.A4.2.7
Aso, Shigeru	A	IAC-19.C4.2.8
Aso, Shigeru	A	IAC-19.D2.5.1
Asphaug, Erik	CA	IAC-19.A2.5.2
Asphaug, Erik	CA	IAC-19.B4.7.11
Assis, Shirrel	CA	IAC-19.A6.6.3
Astapenko, Volodymyr	CA	IAC-19.C4.IP.17
Atachahua, Wilmer	CA	IAC-19.A4.2.7
ATIE, Tala	CA	IAC-19.E3.1.12
Atilano Herrera, Luz Miranda	A	IAC-19.A1.7.17
Auburn, John	CA	IAC-19.A6.6.9
Auburn, John	CA	IAC-19.A6.IP.1
Auburn, John	CA	IAC-19.E3.4.4
Auburn, John	CA	IAC-19.A6.10-B4.10.8
Auburn, John	CA	IAC-19.A6.8.7
Audas, Chloé	CA	IAC-19.A2.6.8
Aueron, Alexander	A	IAC-19.A5.4-D2.8.12
Augelli, Mauro	A	IAC-19.A2.1.5
Aumann, Anna	CA	IAC-19.B4.7.9
Auster, Hans-Ulrich	CA	IAC-19.A3.4A.6
Austin, Alex	A	IAC-19.A3.1.6
Austin, Alex	A	IAC-19.B6.2.9
Austin, Alex	CA	IAC-19.C3.2.9
Austin, Alex	CA	IAC-19.D3.2A.2
Austin, Alex	CA	IAC-19.D3.2A.4
Austin, Alex	A	IAC-19.B4.8.2
Avanzi, Alessandro	A	IAC-19.B5.3.4
AVCI, Fatih	A	IAC-19.B4.4.10

Name	Role	Paper
Avilés Rodrigálvarez, Marcos	CA	IAC-19.A3.3B.8
Avsardurst, Cem	CA	IAC-19.E1.8.4
Ayrapetian, Marat	CA	IAC-19.C1.IP.3
Ayres, Virginia	CA	IAC-19.B2.7.11
Ayton, Jeff	CA	IAC-19.A1.1.11
Azcona, Guisella	CA	IAC-19.A4.2.7
Azcue, Joaquin	CA	IAC-19.A7.3.5
Azevedo, Victor	CA	IAC-19.C4.9.8
Aziz, Sarmad	CA	IAC-19.A5.1.3
Aziz, Sarmad	CA	IAC-19.B3.7.4
Azmanska, Monika	CA	IAC-19.D4.4.9
Azriel, Ofir	CA	IAC-19.D1.6.2
B		
Ba, Jin	A	IAC-19.B3.3.3
Babagana, Abubakar	A	IAC-19.E1.9.10
Babayan, Samaneh	A	IAC-19.A7.3.12
Baberwal, Sonal	CA	IAC-19.C2.5.10
Baberwal, Sonal	A	IAC-19.B3.IP.5
Baberwal, Sonal	CA	IAC-19.A1.8.6
Babetto, Laura	CA	IAC-19.B4.7.5
Babio, Enrique	A	IAC-19.C1.2.10
Babu, Adhithya	A	IAC-19.C1.9.4
Babuscia, Alessandra	A	IAC-19.B2.7.1
Babuscia, Alessandra	A	IAC-19.B4.8.5
Bach, Christian	CA	IAC-19.C4.10.8
Bachmann, Markus	CA	IAC-19.B6.2.8
Back, David	CA	IAC-19.B4.2.3
Bacsardi, Laszlo	CA	IAC-19.B2.8-GTS.3.6
Badia, Marc	CA	IAC-19.B4.6B.3
Baek, Seungkwan	CA	IAC-19.C4.5.10
Baek, Seungwhan	CA	IAC-19.C4.IP.13
Baghban Kondori, Maryam	CA	IAC-19.C3.2.6
Baghchehsara, Ali	A	IAC-19.B6.IP.6
Baglioni, Pietro	A	IAC-19.A3.3A.6
Bahov, Bozhidar	CA	IAC-19.A2.4.7
Bahu, Jean-Marc	CA	IAC-19.D2.4.1
Bai, Xiaoli	CA	IAC-19.A6.7.10
Bai, Xueliang	CA	IAC-19.B4.2.12
Bai, Yunqui	CA	IAC-19.B4.6B.2
Bailey, Brad	A	IAC-19.A3.2B.10
Bailon-Ruiz, Rafael	CA	IAC-19.B5.2.6
BainBerg, Shai	CA	IAC-19.A5.2.13
Bairstow, Brian	CA	IAC-19.C3.3.1
Bajanaru, Paul	CA	IAC-19.A3.3B.8
Baker, Noel	CA	IAC-19.B4.2.13
Bakkali Abderrahaman, Amina	CA	IAC-19.A2.6.8
Balachandran, Katiyayni	A	IAC-19.A6.1.7
Balado, Ana	CA	IAC-19.A7.3.5
Baladron, Morgane	A	IAC-19.E6.3.5
Balagurin, Oleksii	CA	IAC-19.B6.IP.2
Balagurin, Oleksii	CA	IAC-19.C1.IP.10
Balasubramani, Prajwal	CA	IAC-19.A3.IP.13
Balasubramaniam, Rajeswari	A	IAC-19.B4.IP.25
Balasubramanian, Karthic	CA	IAC-19.C1.7.10
Baldesi, Gianluigi	CA	IAC-19.D5.2.2
Balika, Lahib	CA	IAC-19.C4.4.10
Baliukin, Igor	CA	IAC-19.B4.2.2
Balke, Alexander	CA	IAC-19.B2.7.9
Ball, Katelyn	A	IAC-19.B4.6B.2
Ballester Ferrer, Marta	CA	IAC-19.A2.3.5
Ballheimer, Walter	CA	IAC-19.C3.IP.3
Bally, Philippe	CA	IAC-19.C1.1.5
Balogh, Werner R.	A	IAC-19.B1.1.2
Balogun, Ifeoluwa	CA	IAC-19.B1.3.10
Balsamo, Michele	A	IAC-19.A2.7.1
Balsamo, Michele	CA	IAC-19.A2.7.11
Baltazar Garduño, Ana Cristina	CA	IAC-19.D4.2.8
Baltazar Garduño, Ana Cristina	CA	IAC-19.D3.IP.3
Baltazar Garduño, Ana Cristina	A	IAC-19.D3.4.7
Ban, Hong Seop	CA	IAC-19.C4.5.10
Bandini, Veronica	CA	IAC-19.E1.3.8
Bandini, Veronica	A	IAC-19.B2.4.7
Bandla, Sirisha	A	IAC-19.B3.2.11
Bandla, Sirisha	A	IAC-19.D2.7.3
Bando, Mai	CA	IAC-19.C1.1.1
Bando, Mai	CA	IAC-19.C1.4.2
Bando, Mai	CA	IAC-19.C1.9.10
Bandyopadhyay, Saptarshi	A	IAC-19.C1.7.5
Bandyopadhyay, Tirthankar	CA	IAC-19.D3.IP.5
Bane, Nathan	A	IAC-19.A2.3.9
Banerdt, William Bruce	CA	IAC-19.A3.3A.4
Bang cheng, Ai	A	IAC-19.C2.4.12
Banglaore, Kaushik	CA	IAC-19.B1.3.6
Banker, Brian	A	IAC-19.A5.3-B3.6.1
Banker, Brian	CA	IAC-19.B4.9-GTS.5.6
Banner, Benjamin	CA	IAC-19.B3.IP.1
Bannova, Olga	CA	IAC-19.D4.1.6
Bannova, Olga	CA	IAC-19.E4.1.5
Bannova, Olga	CA	IAC-19.E5.1A.5
Bannova, Olga	CA	IAC-19.E1.3.3
Bannova, Olga	A	IAC-19.E1.5.12
Bannova, Olga	CA	IAC-19.B3.8-GTS.2.3
Bannova, Olga	CA	IAC-19.E5.1B.5
Banos, Narcís Miguel	CA	IAC-19.A6.4.6
Bao, Wen	CA	IAC-19.C4.IP.28
Bapat, Tanaya	CA	IAC-19.E2.4.7
Bapat, Tanaya	CA	IAC-19.E2.4.8
Baptista, Victor	CA	IAC-19.B4.1.10
Baptista, Victor	CA	IAC-19.E1.2.7
Baptista, Victor	A	IAC-19.B4.IP.5
Barabash, Petr	CA	IAC-19.A1.IP.11
Baranov, Andrey	A	IAC-19.C1.1.6
Baranov, Andrey	A	IAC-19.A6.5.6
Barat, Itziar	A	IAC-19.C1.1.4
Barato, Francesco	CA	IAC-19.C4.6.4
Barber, Simeon	CA	IAC-19.A3.2C.6
Barbero, Davide	CA	IAC-19.A5.1.9
Barbero, Davide	CA	IAC-19.C3.4.11
Barbier, Louis	CA	IAC-19.A3.1.1
Barbosa, Adilson	A	IAC-19.D1.3.8
Barbosa, Adilson	A	IAC-19.D1.4B.9
Barbosa, Henrique	CA	IAC-19.B1.2.7
Barco, Alessandra	A	IAC-19.C3.5-C4.7.2
Baresi, Nicola	A	IAC-19.C1.4.7
Barez, Fred	CA	IAC-19.A5.IP.2
Barfknecht, Peter	CA	IAC-19.D1.6.1
Barnard, Ansley	A	IAC-19.C3.4.7
Barnard, Arno	CA	IAC-19.E2.1.1
Barnes, David G.	CA	IAC-19.B3.8-GTS.2.5
Barnhard, Gary	A	IAC-19.C3.2.3
Barnhard, Gary	A	IAC-19.D3.2A.7
Barnhart, David	CA	IAC-19.D1.1.2
Barnhart, David	CA	IAC-19.D1.2.9
Barnhart, David	CA	IAC-19.B4.IP.16
Barnhart, David	A	IAC-19.D1.6.9
Baro, Michael	CA	IAC-19.C2.3.3
Barona, David	CA	IAC-19.B4.6B.2
Barr, Stephen	CA	IAC-19.A1.3.17
Barradas Barradas, Cristina	CA	IAC-19.E1.9.13
Barragán Ibáñez, Mateo Sebastian	CA	IAC-19.A1.3.15
Barredo Juan, Antoni	CA	IAC-19.E2.1.5
Barrera-Ars, Jordi	CA	IAC-19.B4.IP.18
Barrett, Emma	CA	IAC-19.A1.1.5
Barrett, Michael	CA	IAC-19.B3.1.7
Barrios, Elizabeth	CA	IAC-19.C2.7.4
Barrios, Elizabeth	A	IAC-19.C2.8.7
Barrueta Flores, Nancy Cihuapilli	CA	IAC-19.B4.1.11
Barschke, Merlin F.	A	IAC-19.B4.6A.1
Barsoum, Christopher	A	IAC-19.B6.IP.5
Barthelmes, Stefan	CA	IAC-19.A3.4B.8
Bartholomäus, Julian	CA	IAC-19.B4.6A.1
Bartkowiak, Bartosz	CA	IAC-19.D2.6.8
Bartlett, Ian Stuart	CA	IAC-19.D4.5.2
Bartoe, John David	CA	IAC-19.E1.2.4
Barton, Jeffrey	CA	IAC-19.C1.9.1
Bartosch, Wolfgang	CA	IAC-19.A2.3.6
Bartram, Scott	CA	IAC-19.B1.3.8
Bartz-Beielstein, Thomas	CA	IAC-19.B4.IP.20

Name	Role	Paper
Bartzanas, Thomas	CA	IAC-19.B3.8-GTS.2.6
Barzon, Andrea	CA	IAC-19.A5.1.14
Basak, Suryoday	A	IAC-19.A7.2.12
Basner, Mathias	CA	IAC-19.A1.1.1
Basner, Mathias	A	IAC-19.A1.1.2
Basset, Christophe	CA	IAC-19.B4.IP.35
Bastante, Juan Carlos	A	IAC-19.C1.IP.15
Bastida Virgili, Benjamin	CA	IAC-19.A6.4.2
Bastide, Laurent	CA	IAC-19.A7.3.5
Basu, Tamalee	A	IAC-19.D4.1.6
Basu, Tamalee	A	IAC-19.E5.1A.4
BASU, VICTOR	A	IAC-19.A7.IP.2
Batenburg, Peter	A	IAC-19.E5.5.4
Bathgate, Stephen	CA	IAC-19.C4.IP.9
Bathrick, Elizabeth	CA	IAC-19.B6.IP.4
Batista Negri, Rodolfo	A	IAC-19.C1.7.11
Batt, Jason	CA	IAC-19.D1.1.3
Battistelli, Enrico	CA	IAC-19.A7.1.6
Baturoni Cortez, Alicia	CA	IAC-19.D1.4B.3
Bauer, Cody	CA	IAC-19.D4.2.8
Bauer, Cody	CA	IAC-19.D3.IP.3
Bauer, Frank	A	IAC-19.E1.1.6
Bauer, Philipp	CA	IAC-19.C4.4.8
Bauer, Waldemar	A	IAC-19.D2.6.9
Bauer, Waldemar	CA	IAC-19.B4.8.12
Bauernschmidt, Kirsten	CA	IAC-19.A5.3-B3.6.8
Baumann, Frank	CA	IAC-19.B4.IP.2
Baumann, Frank	A	IAC-19.B4.6B.11
Baumann, Ingo	A	IAC-19.E7.7.9
Baumann, Tom	A	IAC-19.C1.IP.10
Bausmayer, Julie	CA	IAC-19.D4.2.8
Bausmayer, Julie	CA	IAC-19.D3.IP.3
Bawamia, Ahmad	CA	IAC-19.B4.6A.1
Bayard, David	CA	IAC-19.C1.7.5
Bayer, Ralph	A	IAC-19.A5.3-B3.6.2
Bayer, Ralph	CA	IAC-19.D1.6.8
Bayraktar, Ömer	CA	IAC-19.B4.2.14
Bazzano, Giulia	A	IAC-19.D5.3.10
Bazzi, Wael	A	IAC-19.E1.9.3
Beaton, Kara	A	IAC-19.B3.5.7
Beaton, Kara	CA	IAC-19.A5.IP.6
Beauvois, Erwan	CA	IAC-19.A5.1.9
Beauvois, Erwan	CA	IAC-19.B3.4-B6.4.10
Beauvois, Erwan	A	IAC-19.A5.2.5
Beauvois, Erwan	A	IAC-19.E7.IP.19
Beauvois, Erwan	CA	IAC-19.D4.5.5
Beblo-Vranesevic, Kristina	CA	IAC-19.A1.6.10
Beblo-Vranesevic, Kristina	CA	IAC-19.A1.7.12
Becedas Rodríguez, Jonathan	CA	IAC-19.A2.1.10
Becedas Rodríguez, Jonathan	CA	IAC-19.C1.1.3
Becedas Rodríguez, Jonathan	CA	IAC-19.A6.4.6
Becedas Rodríguez, Jonathan	CA	IAC-19.C2.5.2
Becedas Rodríguez, Jonathan	CA	IAC-19.B4.6A.2
Becedas Rodríguez, Jonathan	CA	IAC-19.C2.6.1
Beck, Adam	CA	IAC-19.D4.IP.8
Beck, James	CA	IAC-19.A6.4.6
Beck, James	CA	IAC-19.C2.5.2
Beck, James	CA	IAC-19.E7.7.4
Beck, Peter	A	IAC-19.D2.7.2
Becker, Dennis	CA	IAC-19.A2.3.6
Becker, Karsten	CA	IAC-19.A3.2C.10
Becker, Karsten	CA	IAC-19.B2.7.13
Becker, Kate	CA	IAC-19.B1.1.3
Becker, Marcel	A	IAC-19.A6.1.9
Becker, Moacir	CA	IAC-19.B4.1.13
Becker, Moacir	A	IAC-19.A6.6.3
Beckingham, Thomas	A	IAC-19.A1.3.20
Bedetti, Emanuele	CA	IAC-19.E1.3.8
Bedetti, Emanuele	CA	IAC-19.B2.4.7
Bedington, Robert	A	IAC-19.B4.2.12
Bedington, Robert	CA	IAC-19.B2.5.7
Beentjes, Dieke	CA	IAC-19.A7.IP.5
Beglov, Rushan	CA	IAC-19.A5.1.5
Behrens, Jonathan	CA	IAC-19.C3.5-C4.7.3
Behrmann, Christopher	CA	IAC-19.E2.3-GTS.4.2
Behrmann, Christopher	CA	IAC-19.A2.6.4
Beichman, Charles	CA	IAC-19.D4.4.2
Beisser, Kerri	A	IAC-19.E1.6.5
Bejenke Walsh, Irene	CA	IAC-19.E6.5-GTS.1.9
Bekdash, Omar	CA	IAC-19.A5.IP.6
Bekembayev, Arman	A	IAC-19.B4.6A.10
Bekembayev, Arman	CA	IAC-19.B4.IP.36
Bekker, Dmitriy	CA	IAC-19.B6.IP.4
Belakovskiy, Mark	CA	IAC-19.B3.2.10
Belaroza, Leonardo	CA	IAC-19.D2.IP.16
Beldavs, Vidvuds	CA	IAC-19.A3.2C.1
Belderrain, Mischel Carmen	CA	IAC-19.E5.4.8
Belenguer, Tomás	CA	IAC-19.A3.3B.11
Belfi, Jacopo	CA	IAC-19.B2.4.2
Belingheri, Paola	CA	IAC-19.E6.1.1
Bell, Dylan	CA	IAC-19.D4.1.12
Bell, Dylan	CA	IAC-19.C4.10.4
Bell, Jordan	CA	IAC-19.E5.4.11
Bell, Suzanne	CA	IAC-19.A1.1.6
Bell, Suzanne	CA	IAC-19.A1.IP.3
Bella, Salvatore Andrea	CA	IAC-19.D1.1.8
Bellefeuille, Philipe	CA	IAC-19.A5.3-B3.6.3
Belley, Katia	A	IAC-19.B3.1.3
Bellier, Thomas	CA	IAC-19.C4.6.2
Bellomo, Nicolas	A	IAC-19.C4.8-B4.5A.5
Belloni, Federico	CA	IAC-19.B4.5.7
Belloni, Federico	CA	IAC-19.B5.3.2
Belloni, Marco	CA	IAC-19.B2.4.2
Ben Bekhti, Nadya	CA	IAC-19.A6.IP.3
Ben Larbi, Mohamed Khalil	CA	IAC-19.B6.2.2
Benakis, Michalis	A	IAC-19.D5.1.11
Benavides, Eliot	CA	IAC-19.B4.1.6
Benavides, Tatiana	CA	IAC-19.E5.3.10
Benavides, Tatiana	A	IAC-19.E1.7.4
Bender, Doug	CA	IAC-19.E1.2.11
Bendtsen, Søren	CA	IAC-19.A1.3.18
Benford, Gregory	CA	IAC-19.A4.1.15
Benidar, Abdessamad	CA	IAC-19.C4.4.1
Benifand, Ksenia	A	IAC-19.A1.4.5
Benifand, Ksenia	CA	IAC-19.A1.4.8
Benjamin, Greg	CA	IAC-19.D3.2A.10
Benkoski, Jason	A	IAC-19.D4.4.4
Bennet, Alex	CA	IAC-19.C4.4.1
Bennet, Francis	CA	IAC-19.A6.4.8
Bennett, Anne Aryadne	A	IAC-19.A6.3.11
Bennett, Brett	A	IAC-19.B4.9-GTS.5.1
Bennett, James	CA	IAC-19.A6.1.5
Bennett, James	CA	IAC-19.A6.7.4
Bennett, James	CA	IAC-19.A6.9.8
Benninghoff, Heike	CA	IAC-19.C1.8.6
Benson, Ryan	CA	IAC-19.E3.1.3
Bentum, Mark	CA	IAC-19.B4.2.11
Bentum, Mark	CA	IAC-19.A7.3.9
Bentum, Mark	CA	IAC-19.A7.3.11
Bentum, Mark	CA	IAC-19.A7.3.12
Bentum, Mark	CA	IAC-19.A3.IP.12
Bentum, Mark	CA	IAC-19.B2.7.5
Berea, Anamaria	CA	IAC-19.A4.2.4
Berea, Anamaria	A	IAC-19.A4.2.15
Berga, Marco	CA	IAC-19.C1.7.9
Bergeon, Nathalie	CA	IAC-19.A2.6.2
Berger, Marcel	CA	IAC-19.C4.4.8
Berger, Thomas	CA	IAC-19.A1.5.5
Bergman, Dean	CA	IAC-19.A3.5.5
Bergman, Matt	CA	IAC-19.A3.2A.7
Bergmann, Benedikt	CA	IAC-19.A3.3A.11
Bergmann, Benedikt	CA	IAC-19.A5.4-D2.8.9
Bergstrom Roos, Johanna	A	IAC-19.E6.1.4
Bering, Edgar	A	IAC-19.C4.4.13
Bernabei, Manuele	CA	IAC-19.C2.5.1
Bernal, Cesar	CA	IAC-19.A6.5.1
Bernardini, Morena	A	IAC-19.D1.6.7
Bernardini, Nicoló	CA	IAC-19.A2.6.8
Bernelin, Marie-Christine	CA	IAC-19.E1.3.10
Bernelin, Marie-Christine	A	IAC-19.D2.6.5

Name	Role	Paper
Bernelin, Marie-Christine	CA	IAC-19.E6.4.11
Bernelli-Zazzera, Franco	CA	IAC-19.A6.4.6
Bernie, Anita	CA	IAC-19.B4.IP.10
Bernie, Anita	A	IAC-19.D1.IP.3
Bernknopf, Richard	CA	IAC-19.E3.3.12
Bernstein, Sofia	CA	IAC-19.B4.IP.16
Berquand, Audrey	A	IAC-19.D5.2.7
Berri, Pier Carlo	CA	IAC-19.B3.7.13
Berrone, Elena	CA	IAC-19.A2.6.9
Berry, Kevin	CA	IAC-19.C1.2.11
Bertachini de Almeida Prado, Antonio Fernando	CA	IAC-19.A5.IP.3
Bertachini de Almeida Prado, Antonio Fernando	CA	IAC-19.C1.7.11
Bertacin, Roberto	CA	IAC-19.C1.5.4
Bertels, Eric	CA	IAC-19.B4.2.11
Bertels, Eric	A	IAC-19.A3.2B.1
Bertels, Koen	CA	IAC-19.E5.2.7
Berthoud, Lucy	CA	IAC-19.C4.5.1
Bertoldi, Artur	CA	IAC-19.C4.3.8
Bertolotto, Stefano	CA	IAC-19.A5.1.9
Bertolotto, Stefano	CA	IAC-19.A1.5.8
Bertolucci, Giacomo	A	IAC-19.C4.6.4
Bertran Rabat, Roger	A	IAC-19.C1.5.3
Bertrand, Jean	CA	IAC-19.A3.4B.8
Bessekon, Yannick	CA	IAC-19.C3.3.2
Besson, Dominique	CA	IAC-19.A3.4B.8
Bestard Körner, Matias	CA	IAC-19.D2.5.3
Bettiol, Laura	A	IAC-19.A3.1.7
Betts, Bruce	A	IAC-19.C4.8-B4.5A.2
Betz, Laura	CA	IAC-19.E1.7.5
Bevilacqua, Riccardo	CA	IAC-19.A6.7.7
Beyermann, Ulrich	CA	IAC-19.E1.3.12
Beylard, Mathieu	CA	IAC-19.E1.3.10
Bhakare, Onkar	CA	IAC-19.E2.3-GTS.4.4
Bharadwaj, Tejas	A	IAC-19.E7.1.12
Bharadwaj, Tejas	A	IAC-19.E7.IP.13
Bhardwaj, Derik	A	IAC-19.C4.6.6
Bhatia, Sahil	A	IAC-19.C4.5.5
Bhatia, Sahil	CA	IAC-19.C4.6.6
Bhattacharjee, Shambo	A	IAC-19.A6.7.6
Bhattacharjee, Shambo	A	IAC-19.A6.9.4
Bhattarai, Shankar	A	IAC-19.C3.4.12
Bhattaru, Srinivasa	A	IAC-19.A1.6.8
Bhawalkar, Prayas	CA	IAC-19.D5.IP.4
Bhosale, Vikas Khandu	CA	IAC-19.C4.IP.14
Bianchi, Germano	CA	IAC-19.A6.7.9
Bianchi, Germano	CA	IAC-19.A6.9.9
Bianchi, Joe	CA	IAC-19.C2.1.1
Bianchi, Stefano	CA	IAC-19.D2.1.5
Bianco, G.	CA	IAC-19.B2.2.4
Bianco, Paolo	CA	IAC-19.D1.6.6
Bibbo, Angelo Raffaele	CA	IAC-19.E2.4.6
Bibring, Jean-Pierre	CA	IAC-19.A3.4A.6
Bibring, Jean-Pierre	CA	IAC-19.A3.4B.2
Bielawska, Katarzyna	CA	IAC-19.C2.IP.21
Biele, Jens	CA	IAC-19.A3.4A.6
Biele, Jens	CA	IAC-19.A3.4B.2
Biele, Jens	CA	IAC-19.A3.4B.8
Bierdel, Marius	CA	IAC-19.B4.4.6
BierLaire, Michel	CA	IAC-19.D5.1.8
Bierwirth, Marco	CA	IAC-19.A3.3A.5
Biggs, James Douglas	CA	IAC-19.C1.6.4
Biggs, Janet	A	IAC-19.A1.4.8
Biktimirov, Shamil	A	IAC-19.A5.2.12
Biktimirov, Shamil	CA	IAC-19.B4.IP.21
Biktimirov, Shamil	CA	IAC-19.A6.8.6
Bilal, Mohd	A	IAC-19.C1.8.5
Bilek, Marcela	CA	IAC-19.C4.IP.9
Bilsland, Charlie	CA	IAC-19.E1.IP.4
Bin, Li	CA	IAC-19.C4.9.7
Bin, Li	CA	IAC-19.C4.9.11
Bina, Bardia	CA	IAC-19.A5.3-B3.6.3
Bindra, Udai	CA	IAC-19.B4.3.6
Bini, Nicoletta	CA	IAC-19.E7.IP.6

Name	Role	Paper
Binios, Alexandros	CA	IAC-19.B4.8.7
Binns, David	CA	IAC-19.D4.1.2
Binsted, Kim	CA	IAC-19.A1.1.11
Binsted, Kim	CA	IAC-19.A5.2.3
Binsted, Kim	CA	IAC-19.A1.IP.4
Binsted, Kim	CA	IAC-19.A1.IP.5
Binsted, Kim	CA	IAC-19.C3.4.7
Biolo, Gianni	A	IAC-19.A1.3.3
Bioulez, Philippe	CA	IAC-19.A2.6.1
Bird, Rachel	CA	IAC-19.B4.4.1
Birkeland, Roger	CA	IAC-19.B2.8-GTS.3.7
Birkeland, Roger	A	IAC-19.B4.7.13
Biryukov, Nikolay	CA	IAC-19.A1.8.14
Bisgaard, Morten	CA	IAC-19.B4.6B.7
Bishop, Alex	A	IAC-19.C4.10.6
Bisht, Deepak	CA	IAC-19.C2.6.10
Bisin, Riccardo	A	IAC-19.C4.2.11
Biswas, Janos	CA	IAC-19.A3.2C.6
Black, Martin	CA	IAC-19.A2.5.3
Blacker, Pete	CA	IAC-19.D1.6.6
Blackerby, Chris	A	IAC-19.A6.5.2
Blackerby, Chris	CA	IAC-19.A6.6.9
Blackerby, Chris	CA	IAC-19.E3.4.4
Blackerby, Chris	CA	IAC-19.A6.10-B4.10.8
Blackerby, Chris	A	IAC-19.A6.8.7
Blackerby, Chris	A	IAC-19.E6.4.1
Blackwell, Jay	CA	IAC-19.E2.3-GTS.4.3
Blanc, Michel	CA	IAC-19.D4.4.2
Blindheim, Sandra	A	IAC-19.D2.2.5
Blinkov, Valentin	CA	IAC-19.C1.IP.3
Blinzler, Brina	CA	IAC-19.C2.2.1
Blottner, Dieter	A	IAC-19.A1.4.14
Blough, Perry	CA	IAC-19.E1.1.5
Blount, PJ	A	IAC-19.E7.4.13
Blount, PJ	CA	IAC-19.E7.5.4
Blows, Roy	CA	IAC-19.C2.2.6
Blows, Roy	CA	IAC-19.A6.6.6
Blundell, Mark	CA	IAC-19.A6.4.8
Boada, Montserrat	A	IAC-19.A2.3.5
Boca, Andreea	CA	IAC-19.C3.3.1
Bockstahler, Klaus	CA	IAC-19.B3.4-B6.4.5
Boden, Ralf	CA	IAC-19.B4.8.12
Bodin, Per	CA	IAC-19.C1.7.12
Bodrova, Julia	CA	IAC-19.A3.2A.9
Boehm, Zachary	CA	IAC-19.E2.3-GTS.4.3
Boehme, Matthias	CA	IAC-19.A5.1.3
Boehme, Matthias	CA	IAC-19.B3.7.4
Bogan, Line Stensby	CA	IAC-19.E1.IP.4
Boggs, Kathleen	A	IAC-19.B3.7.1
Bogno, Abdoul-Aziz	CA	IAC-19.A2.5.10
Bogoi, Alina	CA	IAC-19.C4.9.5
Bohacek, Petr	CA	IAC-19.E7.3.13
Bohacek, Petr	CA	IAC-19.E7.IP.20
Bohacek, Petr	CA	IAC-19.D4.5.9
Bohlmann, Ulrike M.	A	IAC-19.E3.1.6
Boirard, Honorine	CA	IAC-19.A3.4B.8
Boisard, Olivier	CA	IAC-19.A3.IP.21
Boland, Eugene	A	IAC-19.A2.7.4
Bolanle, Olalekan-Ajayi	CA	IAC-19.A1.4.12
Bolart, Carles	CA	IAC-19.A7.2.10
Boles, Sören	CA	IAC-19.A2.1.1
Bolognini, Davide	CA	IAC-19.A2.7.11
Boloh, Loïc	CA	IAC-19.D5.1.4
Boltenhagen, Klemens	CA	IAC-19.E1.IP.24
Bolton, Jennifer	A	IAC-19.E5.4.9
Bonacci, Carissa Brealey	CA	IAC-19.B6.3.12
Bonds, Byron	CA	IAC-19.A2.5.9
Bonetti, Davide	CA	IAC-19.D2.4.5
BONGUET, Patrick	CA	IAC-19.D2.1.5
Bonnal, Christophe	A	IAC-19.A6.8.1
Bonneau, Olivier	CA	IAC-19.C4.10.1
Bookout, Paul	CA	IAC-19.B4.5.5
Boone, Bradley	CA	IAC-19.D4.IP.8
Boonstra, Albert-Jan	CA	IAC-19.B4.2.11
Boonstra, Albert-Jan	CA	IAC-19.A3.2B.1

Name	Role	Paper
Boonstra, Albert-Jan	CA	IAC-19.A7.3.9
Boora, Vikrant	A	IAC-19.A1.IP.19
Bope, Ashleigh	A	IAC-19.A1.8.3
Bordi, Francesco	A	IAC-19.D1.5.10
Borek, Stephan	CA	IAC-19.B6.1.11
Borg, Josef	CA	IAC-19.A6.9.9
Borges Carvalho, Nuno	CA	IAC-19.B4.6A.5
Boroson, Don	CA	IAC-19.B2.7.12
Borovikov, Aleksandr	CA	IAC-19.E2.4.5
Borowitz, Mariel	A	IAC-19.E3.3.14
Borowitz, Mariel	A	IAC-19.B1.5.3
Borowski (retired), Stanley K.	A	IAC-19.D3.2B.7
Borowy, Carsten	A	IAC-19.D4.2.13
Bortolotti, Claudio	CA	IAC-19.A6.9.9
Borzenkov, Mark	CA	IAC-19.A6.6.1
Bosch Bruguera, Miquel	A	IAC-19.A1.1.9
Bosch Bruguera, Miquel	A	IAC-19.B3.5.8
Boschetto, Alberto	CA	IAC-19.C2.5.1
Boschetto, Alberto	CA	IAC-19.C2.5.12
Boswell, Rod	CA	IAC-19.C4.4.1
Botha, Marie	CA	IAC-19.E3.3.8
Botha, Marie	A	IAC-19.E6.4.6
Botham, Christopher James	CA	IAC-19.E5.1A.9
Botta, Eleonora	CA	IAC-19.A6.5.5
Botta, Sonia Alejandra	A	IAC-19.A5.1.9
Botta, Sonia Alejandra	CA	IAC-19.D4.5.5
Bottini, Claire	CA	IAC-19.D4.5.12
Bottini, Luana	CA	IAC-19.C2.5.1
Bottini, Luana	CA	IAC-19.C2.5.12
Bou-Balust, Elisenda	CA	IAC-19.D1.2.5
Bou-Balust, Elisenda	CA	IAC-19.B4.3.4
Boulais, Oceane	CA	IAC-19.B4.3.1
Bourassa, Matthew	CA	IAC-19.A3.2C.7
Bouskela, Adrien	A	IAC-19.B4.8.13
Bousquet, Pierre W.	A	IAC-19.A3.4B.10
Boutonnet, Arnaud	CA	IAC-19.A3.5.4
Bouzekri, Oilid	A	IAC-19.B2.7.8
Bowen-Rotsaert, Alexander	A	IAC-19.E1.2.1
Bowersox, Ken	A	IAC-19.B3.1.1
Bowersox, Madison	A	IAC-19.E1.1.3
Boye, Jeffrey	CA	IAC-19.A3.IP.5
Boyle, Robert	CA	IAC-19.D1.6.1
Boyle, Sadie M.	CA	IAC-19.A1.6.2
Braatz, Lena	CA	IAC-19.B2.7.3
Brack, Daniel	A	IAC-19.C1.2.2
Brack, Daniel	CA	IAC-19.A3.4A.7
Bracken, Philip	A	IAC-19.B4.IP.7
Bradford, Andy	CA	IAC-19.A6.5.2
Bradford, Andy	CA	IAC-19.A6.6.9
Bradford, John	CA	IAC-19.D3.2A.9
Bradley, Buckles	CA	IAC-19.A3.IP.11
Bragaglia, Mario	CA	IAC-19.C2.5.6
Braithwaite, Timothy	CA	IAC-19.B3.1.3
Brambora, Clifford	CA	IAC-19.B4.8.4
Brand, Christopher	CA	IAC-19.D1.4A.3
Brand, Christopher	CA	IAC-19.A3.IP.13
Brandt, Hannes	CA	IAC-19.E2.2.8
Brandt, Pontus	CA	IAC-19.D4.4.1
Brandt, Pontus	A	IAC-19.D4.4.2
Brandt, Pontus	CA	IAC-19.D4.4.4
Brandt, Tim	CA	IAC-19.A3.3A.11
Brandt, Tim	CA	IAC-19.C4.4.11
Brandt, Tim	CA	IAC-19.C2.7.2
Brandt, Tim	CA	IAC-19.A5.4-D2.8.9
Brant, Michaela	CA	IAC-19.A5.IP.2
Bras Pereira, Manuel	CA	IAC-19.D1.6.8
Braun, Benjamin	CA	IAC-19.D2.5.3
Braun, Benjamin	CA	IAC-19.C3.IP.3
Braun, Vitali	CA	IAC-19.A6.4.2
Braun, Vitali	A	IAC-19.A6.4.9
Braun, Weston	CA	IAC-19.C4.4.1
Brauns, Katharina	CA	IAC-19.A1.1.1
Brautigan, Patrick	CA	IAC-19.A1.3.17
Braxmaier, Claus	CA	IAC-19.A2.1.2
Braxmaier, Claus	CA	IAC-19.A2.3.6
Brazier, Frances	CA	IAC-19.D1.1.4
Brazier, Frances	CA	IAC-19.E5.2.1
Brazier, Frances	CA	IAC-19.A1.7.9
Brcic, Jelena	CA	IAC-19.A1.1.5
Brcic, Jelena	A	IAC-19.A1.1.7
Brcic, Jelena	CA	IAC-19.A1.1.12
Bremer, Stefanie	CA	IAC-19.A2.1.6
Bremer, Stefanie	CA	IAC-19.C1.IP.5
Brenner, Andreas	CA	IAC-19.A6.IP.3
Breon, Susan	A	IAC-19.D1.6.1
Bresler, Karol	CA	IAC-19.A3.IP.16
Bressan, Nadja	CA	IAC-19.C2.IP.16
Brethe, David	CA	IAC-19.C1.5.1
Brett, Michael	A	IAC-19.B5.1.5
Brettle, Harriet	A	IAC-19.B4.3.8
Brettle, Harriet	A	IAC-19.A6.10-B4.10.8
Breś, Włodzimierz	CA	IAC-19.A1.IP.17
Briatore, Simone	A	IAC-19.D1.4A.9
Briatore, Simone	CA	IAC-19.D1.5.6
Bridges, Christopher P.	CA	IAC-19.A3.2B.6
Bridges, Christopher P.	CA	IAC-19.D1.6.6
Brieß, Klaus	CA	IAC-19.B2.3.10
Brieß, Klaus	CA	IAC-19.C1.6.7
Brieß, Klaus	CA	IAC-19.B4.7.14
Briess, Klaus	CA	IAC-19.D1.4B.8
Brieß, Klaus	CA	IAC-19.B2.7.9
Brieß, Klaus	CA	IAC-19.B4.6B.11
Brigos, Miguel	CA	IAC-19.A2.3.5
Brindle, Laura	CA	IAC-19.B4.IP.17
Briskman, Robert D.	A	IAC-19.B2.3.6
Brito, Claude-martin	CA	IAC-19.C4.4.10
Britting, Thomas	CA	IAC-19.D2.3.3
Briz Valer, Jose Francisco	CA	IAC-19.C1.7.9
Broadwater, Joshua	CA	IAC-19.B6.IP.4
Broadwell, Marguerite	A	IAC-19.D4.2.11
Brochard, Roland	CA	IAC-19.A3.3B.9
Brockmann, Björn	CA	IAC-19.E6.5-GTS.1.9
Brodin, Staffan	CA	IAC-19.C2.5.11
Brodin, Staffan	A	IAC-19.C4.10.2
Brodrick, David	CA	IAC-19.A6.4.8
Broggi, Giulia	CA	IAC-19.E1.3.8
Broggi, Giulia	CA	IAC-19.B2.4.7
Bronstein, Madeleine	CA	IAC-19.A6.8.2
Brophy, John	CA	IAC-19.C4.4.2
Broquetas, Antoni	CA	IAC-19.B1.2.10
Brouwer, Hugo	A	IAC-19.B4.9-GTS.5.4
Browder, Becca	A	IAC-19.D6.3.1
Brown, Melrose	CA	IAC-19.A6.10-B4.10.4
Brown, Mia	CA	IAC-19.A7.1.1
Brox, Lise	A	IAC-19.C4.10.12
Brubaker, Elizabeth	A	IAC-19.E2.4.2
Brumfield, Mark	CA	IAC-19.B2.7.10
Brunet, Pierre	CA	IAC-19.C3.5-C4.7.2
Brunne, Paweł	CA	IAC-19.B4.9-GTS.5.5
Brunne, Paweł	CA	IAC-19.C2.IP.21
Bruns, Robert	A	IAC-19.A2.4.7
Bryant, Layla	A	IAC-19.E1.6.11
Bryson, Donald	CA	IAC-19.A3.2A.4
Bryson, Mitch	CA	IAC-19.A6.1.5
BUATHIER, Yoann	CA	IAC-19.A1.7.13
Bucci, Lorenzo	CA	IAC-19.C1.2.3
Bucci, Lorenzo	A	IAC-19.C1.4.4
Bucci, Lorenzo	A	IAC-19.A6.6.10
Buchholz, Philip	CA	IAC-19.A3.IP.22
Buchlak, Quinlan	CA	IAC-19.B3.2.5
Buck, Elizabeth	CA	IAC-19.A3.3A.9
Buckey, Jay	CA	IAC-19.A1.1.11
Buckey, Jay	CA	IAC-19.A1.IP.4
Buckey, Jay	CA	IAC-19.A1.IP.9
Buder, Maximilian	CA	IAC-19.A3.4B.9
Budnik, Sergey	CA	IAC-19.C2.8.2
Budnik, Sergey	CA	IAC-19.C2.8.9
Budzynski, Alan	CA	IAC-19.B4.9-GTS.5.5
Bueno dos Santos, Marcio	CA	IAC-19.C2.7.10
Buffa, Franco	CA	IAC-19.A7.2.3

Name	Role	Paper
Buiko, Alfredas	A	IAC-19.A4.2.12
Buinhas, Luisa	A	IAC-19.C1.1.12
Buinhas, Luisa	CA	IAC-19.D1.4A.6
BUISSON, Francois	A	IAC-19.B1.2.3
Bukala, Aleksandra	CA	IAC-19.E6.5-GTS.1.7
Bukhtoyarov, Mikhail	CA	IAC-19.D4.IP.12
Bukmaier, Alexander	A	IAC-19.D1.4B.6
Bullinger, Lilli	A	IAC-19.B6.IP.3
Bultitude, James	A	IAC-19.B3.3.10
Bultitude, James	CA	IAC-19.A6.6.2
Bunte, Karl Dietrich	CA	IAC-19.D2.3.2
Buquo, Lynn	CA	IAC-19.E3.2.4
Burderi, Luciano	CA	IAC-19.C1.5.4
Burdeyniy, Nikolay	CA	IAC-19.B3.2.10
Burg, Alexander	A	IAC-19.B3.3.9
Burg, Alexander	CA	IAC-19.B3.7.1
Burgess, Christopher	CA	IAC-19.A6.5.1
Burgett, Brandon	CA	IAC-19.B4.8.5
Burjek, Andrew	CA	IAC-19.B6.1.5
Burke, Laura	CA	IAC-19.A5.4-D2.8.6
Burks, Joshua	A	IAC-19.E7.IP.15
Burmeister, Kai	A	IAC-19.B3.4-B6.4.4
Burns, Tatem	A	IAC-19.A1.IP.3
Burov, Alexander	A	IAC-19.D4.3.16
Burstein, Joshua	A	IAC-19.E1.IP.34
Burstein, Joshua	CA	IAC-19.A3.2C.9
Burzykowska, Anna	A	IAC-19.B2.5.3
Busch, Stephan	CA	IAC-19.B4.4.6
Bushman, Stewart	CA	IAC-19.A3.5.1
Bussler, Leonid	CA	IAC-19.D2.3.10
Bussler, Leonid	CA	IAC-19.D2.4.2
Bussler, Leonid	CA	IAC-19.D2.4.8
Butcher, Ginger	A	IAC-19.E1.1.8
Buzzin, Alessio	CA	IAC-19.A2.7.6
Buzzoni, Alberto	CA	IAC-19.A6.7.9
Byerly, Adam	CA	IAC-19.B6.IP.4
Byers, Harry	A	IAC-19.C2.IP.12
Bykova, Eleonora	A	IAC-19.A1.7.10
Bédard, Donald	CA	IAC-19.A6.1.4
Bélanger, Guillaume	CA	IAC-19.D5.3.3
Bérend, Nicolas	A	IAC-19.D2.7.11
Böhrk, Hannah	CA	IAC-19.D2.4.2
Bölke, Daniel	CA	IAC-19.E2.3-GTS.4.2
Böttcher, Lorenz	CA	IAC-19.A6.1.9
Böttcher, Maximilian	CA	IAC-19.B4.3.2
Böttger, Ute	CA	IAC-19.A3.4B.8
Böttger, Ute	CA	IAC-19.A3.4B.9

C

C, Barath	CA	IAC-19.A3.IP.9
C, Barath	CA	IAC-19.C1.7.10
C H, Raghavi	A	IAC-19.A1.8.1
C K, Krishnadasan	CA	IAC-19.C4.2.3
Cabero, Marco	A	IAC-19.E1.IP.18
Cabero Zabalaga, Marco Antonio	CA	IAC-19.B4.4.10
Cable, Vaughn	CA	IAC-19.B4.8.5
Cabrales Hernandez, Alejandro	CA	IAC-19.D1.2.2
Cabrera Alvarado, Sandra	A	IAC-19.E5.4.1
Cabrero Gómez, Juan Francisco	CA	IAC-19.A3.3B.11
Cacchione, Stefano	CA	IAC-19.A2.7.11
Cacciotti, Fabrizio	CA	IAC-19.E2.4.6
Cahoy, Kerri	CA	IAC-19.C1.1.7
Cai, Wenyi	A	IAC-19.E6.3.8
Cai, Zhiming	CA	IAC-19.A7.2.2
Caiani, Enrico Gianluca	CA	IAC-19.A1.2.3
Caiani, Enrico Gianluca	CA	IAC-19.A1.IP.10
Cairns, Iver	A	IAC-19.B4.4.5
Cairns, Iver	CA	IAC-19.C4.IP.9
CaJacob, Daniel	CA	IAC-19.C4.8-B4.5A.8
Calabrese, Davide	A	IAC-19.B4.6B.4
Calabrese, Diego	CA	IAC-19.B1.2.11
Calciolari, Fábio Luiz	CA	IAC-19.C4.IP.20
Calderón Pérez, Vivian	A	IAC-19.E5.4.2
Caldwell, Barrett	A	IAC-19.E1.6.2
Caldwell, Bryan	CA	IAC-19.A5.2.3
Calgaro, Simone	CA	IAC-19.B4.6B.8
Callens, Natacha	CA	IAC-19.E1.3.10
Calles, Walter	CA	IAC-19.D3.IP.1
Calles, Walter	A	IAC-19.D3.4.2
Calnan, Gary	CA	IAC-19.A2.5.10
Calosso, Claudio Eligio	CA	IAC-19.B2.4.2
Calveras, Anna	CA	IAC-19.B2.1.7
Calveras, Anna	CA	IAC-19.B4.IP.34
Calvi, Daniele	CA	IAC-19.D1.1.7
Calvi, Daniele	CA	IAC-19.C2.3.1
Calvi, Daniele	CA	IAC-19.C4.4.9
Calvi, Daniele	CA	IAC-19.B4.7.5
Calvi, Daniele	CA	IAC-19.B6.1.3
Calvo Lopez, Francisco D	CA	IAC-19.B4.6A.7
Calzolaio, Diego	A	IAC-19.B2.5.2
Campan, Jérôme	A	IAC-19.B3.4-B6.4.7
Campana, Marie	CA	IAC-19.B1.2.12
Campbell, Brian	A	IAC-19.E1.8.7
Campbell, Daniel	CA	IAC-19.D1.6.2
Campbell, Nicholas	A	IAC-19.D2.3.1
Campo Bagatin, Adriano	CA	IAC-19.A3.4B.5
Campos, Jaime	A	IAC-19.D1.4A.8
Campos Mora, José Ricardo	A	IAC-19.E1.3.4
Campos Mora, José Ricardo	CA	IAC-19.E1.5.9
Camps, Adriano	CA	IAC-19.B2.1.7
Camps, Adriano	CA	IAC-19.D1.2.5
Camps, Adriano	CA	IAC-19.B4.IP.34
Camps, Adriano	CA	IAC-19.B4.6B.3
Canalias, Elisabet	CA	IAC-19.C1.7.3
Canalias, Elisabet	CA	IAC-19.A3.4B.2
Canas, Lina	CA	IAC-19.E1.6.9
Canas, Lina	CA	IAC-19.E5.5.5
Canchal, Maria del Rosario	CA	IAC-19.A3.3B.11
Cano Gómez, Gabriel	CA	IAC-19.A2.2.7
Cano Gómez, Gabriel	CA	IAC-19.A2.4.6
Canton, Remi	A	IAC-19.A2.6.1
Cantoni, Stefania	CA	IAC-19.D1.1.1
Cantoni, Stefania	CA	IAC-19.D2.5.6
Cao, Yan	CA	IAC-19.A6.3.2
Cao, Yan	CA	IAC-19.A6.3.5
Cao, Yan	A	IAC-19.A6.3.6
Capaccioli, Sergio	CA	IAC-19.A2.7.11
Capannolo, Andrea	CA	IAC-19.C1.3.4
Capannolo, Andrea	CA	IAC-19.B4.8.8
Caparros, Andres	CA	IAC-19.C2.5.2
Capatinta, María	CA	IAC-19.A4.2.7
Capello, Elisa	CA	IAC-19.B4.6A.6
Capello, Elisa	CA	IAC-19.C1.6.12
Capitao Patrao, Alexandre	CA	IAC-19.C4.3.3
Capobianco, Antonio	CA	IAC-19.B2.1.3
Capolupo, Francesco	A	IAC-19.C1.8.2
Capon, Christopher	CA	IAC-19.A6.10-B4.10.4
Capova, Klara Anna	CA	IAC-19.A4.2.4
Cappella, Matteo	CA	IAC-19.E3.1.10
Cappellini, Lorenzo	CA	IAC-19.C4.8-B4.5A.5
Cappuccio, Paolo	CA	IAC-19.A7.3.8
Cappuccio, Paolo	CA	IAC-19.B2.7.2
Caprace, Denis-Gabriel	CA	IAC-19.A2.5.4
Caputo, Domenico	CA	IAC-19.A1.6.6
Caputo, Domenico	CA	IAC-19.A2.7.6
Carabellese, Davide	CA	IAC-19.A5.1.9
Carabellese, Davide	CA	IAC-19.B3.4-B6.4.10
Carabellese, Davide	A	IAC-19.A1.5.8
Carbone, Marc	CA	IAC-19.C3.4.3
Cardelli, Fabio	CA	IAC-19.D5.3.10
CARDENAS, LORENA	CA	IAC-19.B2.3.8
Cardi, Margherita	CA	IAC-19.D1.1.1
Cardini, Valerio	A	IAC-19.C2.5.1
Cardone, Franco	CA	IAC-19.A2.6.9
Cardone, Tiziana	CA	IAC-19.A6.2.1
Cardone, Tiziana	CA	IAC-19.D2.3.2
Carinhana Junior, Dermeval	CA	IAC-19.D2.6.3
Carioscia, Sara	CA	IAC-19.E6.2.12
Carletta, Stefano	A	IAC-19.C1.4.3

Name	Role	Paper
Carletta, Stefano	CA	IAC-19.C1.5.11
Carletti, Nicolò	A	IAC-19.B4.6B.7
Carlin, Luca	CA	IAC-19.A6.1.3
Carlino, Roberto	A	IAC-19.D1.6.4
Carlotti, Stefania	A	IAC-19.C4.2.5
Carlsen, Jesper	CA	IAC-19.A1.3.18
Carmen, Christina	CA	IAC-19.E1.1.3
Carmen, Christina	CA	IAC-19.E1.IP.12
Carmen, Christina	CA	IAC-19.E7.IP.15
Carmona Carlos, J.Antonio	CA	IAC-19.D2.7.4
Carneiro Junqueira, Bruno	CA	IAC-19.D1.5.7
Carnelli, Ian	A	IAC-19.A3.4A.9
Carnelli, Ian	CA	IAC-19.C1.7.12
Carnelli, Ian	CA	IAC-19.A3.4B.5
Carnevale, Flavia	CA	IAC-19.B1.2.11
Carnicero Domínguez, Bernardo	CA	IAC-19.B4.4.4
Caroglanian, Armen	CA	IAC-19.B2.7.11
Caroline, Cavel	CA	IAC-19.A1.IP.7
Caron, Anthony	CA	IAC-19.C4.4.10
Carr, Christopher	CA	IAC-19.A1.6.8
Carr, Christopher	CA	IAC-19.A2.7.9
Carrasco, Jose A	A	IAC-19.C3.3.5
Carrera, Erasmo	CA	IAC-19.C2.1.10
Carrera, Erasmo	CA	IAC-19.C2.2.3
Carrera, Erasmo	CA	IAC-19.C2.3.4
Carreño-Megias, Xavier	CA	IAC-19.B1.2.10
Carrigg, Hugh	A	IAC-19.B2.IP.1
Carroll, Danielle	A	IAC-19.A1.3.16
Carroll, Danielle	A	IAC-19.A1.4.9
Carroll, Joseph	A	IAC-19.D3.1.9
Carroll, Joseph	A	IAC-19.A6.5.4
Carroll, Joseph	A	IAC-19.A6.IP.8
Carroll, Julia	A	IAC-19.C2.5.3
Carroll, Katherine	A	IAC-19.E2.3-GTS.4.6
Carroll, Kieran	A	IAC-19.E4.1.7
Carrubba, Elisa	CA	IAC-19.A1.3.3
Carry, Benoît	CA	IAC-19.A3.4B.5
Carson, John	CA	IAC-19.A3.2B.2
Carsten, John	CA	IAC-19.B4.5.13
Carter, Mark	CA	IAC-19.C4.4.13
Carubia, Fabrizio	CA	IAC-19.D1.1.1
Carvajal-Godinez, Johan	A	IAC-19.B4.IP.13
Carvalho, João	CA	IAC-19.D2.4.5
Carvey, Aimee	A	IAC-19.C2.7.3
Casale, Mauro	CA	IAC-19.D5.3.3
Casalone, Cristina	A	IAC-19.A2.6.9
Casanova, Sophia	A	IAC-19.D4.5.2
Casarosa, GianLuca	CA	IAC-19.C2.1.9
Casasanto, Valerie Anne	A	IAC-19.E1.7.2
Casasco, Massimo	CA	IAC-19.A3.3B.8
Casasco, Massimo	CA	IAC-19.A3.4A.9
Cascioli, Gael	CA	IAC-19.A7.3.8
Cash, Ian	A	IAC-19.C3.2.2
Casini, Andrea Emanuele Maria	A	IAC-19.C3.3.2
Casini, Andrea Emanuele Maria	CA	IAC-19.A3.2C.3
Cassenti, Brice	A	IAC-19.C4.10.5
Cassiano Julio Filho, Antonio	A	IAC-19.B6.1.12
Castagnolo, Dario	CA	IAC-19.A1.2.8
Castagnolo, Dario	CA	IAC-19.A2.6.9
Castagnolo, Dario	CA	IAC-19.A2.6.10
Castellanos Velasco, Luis Ángel	A	IAC-19.E6.5-GTS.1.5
Castelão, Inês	A	IAC-19.B1.2.12
Castillo, Diana	CA	IAC-19.E1.1.9
Castillo, Jamil	CA	IAC-19.E6.2.2
Castro, Antero	CA	IAC-19.E1.IP.18
Castro, Guillermo	CA	IAC-19.E1.6.6
Castro, Ignacio	CA	IAC-19.E1.3.4
Castro, Joaquin	A	IAC-19.C4.9.3
Castro, Joshua	CA	IAC-19.E5.1B.3
Castro, Pedro	CA	IAC-19.C4.IP.20
Castro-Hernández, Elena	CA	IAC-19.A2.2.7
Castro-Hernández, Elena	CA	IAC-19.A2.4.6
Cater, John	CA	IAC-19.C4.4.1
Cates, Grant	A	IAC-19.B4.5.3
Catucci, Antonella	CA	IAC-19.C1.1.5

Name	Role	Paper
Caughran, Daniel	CA	IAC-19.A3.IP.5
Cavalli, Lorenzo	CA	IAC-19.D2.5.6
Cavallini, Anders	A	IAC-19.E6.1.9
Cavelan, Xavier	CA	IAC-19.C4.4.10
Cawthorne, Andrew	CA	IAC-19.B1.1.10
Cawthorne, Andrew	CA	IAC-19.B4.4.1
Cawthorne, Andrew	CA	IAC-19.B4.7.1
Ccastellà, Ricard	CA	IAC-19.B4.6B.10
Cecere, Anselmo	CA	IAC-19.C4.5.7
Cecere, Anselmo	CA	IAC-19.C2.4.4
Ceciliano-Jiménez, Yolanda	CA	IAC-19.E6.2.6
Cefola, Paul	CA	IAC-19.C1.3.10
Ceglia, Giuseppe	CA	IAC-19.C2.6.6
Ceglia, Giuseppe	CA	IAC-19.D2.6.7
Celani, Fabio	CA	IAC-19.C1.8.8
Celesti, Paola	CA	IAC-19.E1.3.8
Celesti, Paola	CA	IAC-19.B2.4.7
Celine, Loisel	CA	IAC-19.A3.4B.8
Cembrinski, Tristan	CA	IAC-19.A3.2A.7
Cembrinski, Tristan	CA	IAC-19.C2.5.9
Cenac-Morthe, Celine	CA	IAC-19.A3.4A.6
Cenac-Morthe, Celine	CA	IAC-19.A3.4B.2
Cenac-Morthe, Celine	CA	IAC-19.A3.4B.8
Centuori, Simone	CA	IAC-19.C1.2.10
Centuori, Simone	CA	IAC-19.A3.5.4
Ceperley, Daniel	CA	IAC-19.A6.10-B4.10.1
Cerini, Luigi	CA	IAC-19.A1.2.8
Ceriotti, Matteo	CA	IAC-19.C1.2.7
Ceriotti, Matteo	CA	IAC-19.B4.8.12
Ceroni, Mauro	CA	IAC-19.A4.2.7
Cerquetani, Luca	CA	IAC-19.A2.6.8
Cerrone, Gianluca	CA	IAC-19.E5.2.7
Ceruti, Alessandro	CA	IAC-19.C2.2.1
Cervantes Díaz, Francisco	CA	IAC-19.B4.1.11
Cervone, Angelo	CA	IAC-19.D1.1.6
Cervone, Angelo	CA	IAC-19.E2.1.2
Cervone, Angelo	CA	IAC-19.E2.1.3
Cervone, Angelo	CA	IAC-19.C4.8-B4.5A.4
Cervone, Angelo	CA	IAC-19.B4.8.3
Cervone, Angelo	CA	IAC-19.B4.6B.15
Cesco, Veronica	CA	IAC-19.E1.6.8
Chaar, Sara	CA	IAC-19.A7.2.4
Chabot, Thomas	CA	IAC-19.A6.5.1
Chabot, Thomas	CA	IAC-19.A6.6.7
Chae, Heesang	A	IAC-19.C4.2.12
Chafen, Miguel	CA	IAC-19.D1.1.5
Chagas, Misael	A	IAC-19.A1.2.9
Chahat, Nacer	CA	IAC-19.B2.7.1
Chai, Patrick	A	IAC-19.A5.4-D2.8.8
Chaillet, Corentin	CA	IAC-19.D1.3.6
Chaillet, Corentin	CA	IAC-19.A3.2C.8
CHAIZE, Mathieu	CA	IAC-19.D2.1.5
CHAIZE, Mathieu	CA	IAC-19.B4.5.10
Chalon, Maxim	CA	IAC-19.A3.4B.8
Chalon, Maxim	CA	IAC-19.D1.6.8
Chamberlain, Matthew	A	IAC-19.C3.4.1
Chamika, Withanage Dulani	A	IAC-19.B4.6B.6
Chan, Amy	CA	IAC-19.A6.4.8
Chan, Manwei	A	IAC-19.C1.1.7
Chancharoen, Wares	CA	IAC-19.A2.3.11
Chandra, Aman	CA	IAC-19.D3.1.8
Chandra, Aman	CA	IAC-19.A2.5.2
Chandra, Aman	CA	IAC-19.B4.8.13
Chandra, Aman	A	IAC-19.B4.6B.1
Chandra, Rohan	A	IAC-19.C2.4.7
Chandra, Rohan	CA	IAC-19.D2.IP.13
Chandran, Amal	A	IAC-19.B4.2.10
Chandran, Satheesh	A	IAC-19.C2.8.12
Chandrasekhar, Vinay	CA	IAC-19.B2.6.3
Chang, Chau-Lyan	CA	IAC-19.C2.7.1
Chang, Eva Yi-Wei	A	IAC-19.D6.3.10
Chang, Howard	A	IAC-19.E7.1.6
CHANG, LI-YU	CA	IAC-19.B1.1.4
Chang Diaz, Franklin	CA	IAC-19.C4.4.13
Changeat, Quentin	A	IAC-19.A7.IP.1

Name	Role	Paper
Chapin, William	CA	IAC-19.A5.3-B3.6.6
Chappell, Steve	CA	IAC-19.B3.5.7
Chappell, Steve	CA	IAC-19.A5.IP.6
Chapuy, Marc	CA	IAC-19.C1.8.2
Charles, Christine	A	IAC-19.C4.4.1
Charles, Ivan	CA	IAC-19.A7.3.5
Charles, John	CA	IAC-19.A1.5.5
Charles-aimé, Nzeussi Mbouendeu	CA	IAC-19.B1.1.11
Charnoz, Sébastien	CA	IAC-19.A3.4B.5
Charoenpru, Teerapat	CA	IAC-19.B5.3.9
Chaturvedi, Priyanshi	CA	IAC-19.A1.8.1
Chatzipanagiotis, Michail	A	IAC-19.D6.1.4
Chaudhary, Jayraj	CA	IAC-19.C4.IP.29
Chaudhary, Ravi	CA	IAC-19.D6.1.2
Chaumette, Eric	CA	IAC-19.B2.6.8
Chaumette, Francois	CA	IAC-19.A6.5.1
Chaumette, Francois	CA	IAC-19.A6.6.7
Chavanas, Guillaume	CA	IAC-19.A5.1.9
Chavanas, Guillaume	CA	IAC-19.A1.5.8
Chavers, Greg	A	IAC-19.B3.1.8
Chaves Jiménez, Adolfo	CA	IAC-19.B4.IP.13
Chavez Moreno, Rafael Guadalupe	CA	IAC-19.E1.3.6
Chawla, Raghav	CA	IAC-19.B4.3.1
Chazalnoël, Pascale	CA	IAC-19.A3.4B.8
Chazot, Olivier	CA	IAC-19.A6.4.10
Chebotarev, Yuriy	CA	IAC-19.B3.4-B6.4.6
Chegan̈as, Jean	A	IAC-19.A2.6.7
Chelaru, Teodor-Viorel	A	IAC-19.D2.6.11
Chemoul, Bernard	A	IAC-19.D5.1.4
Chen, Chuan	CA	IAC-19.A6.6.5
Chen, Chuan	CA	IAC-19.A6.IP.4
Chen, Chuan	CA	IAC-19.A6.IP.5
Chen, Danhe	CA	IAC-19.C1.1.6
Chen, Danlei	A	IAC-19.E2.4.4
Chen, Hao	CA	IAC-19.D3.1.4
Chen, Hao	A	IAC-19.D3.1.6
Chen, Hao	A	IAC-19.A5.2.4
Chen, Hao	CA	IAC-19.D3.4.4
Chen, Kuan-Wei	CA	IAC-19.E7.2.1
Chen, Li	CA	IAC-19.A2.IP.4
Chen, Li	CA	IAC-19.D1.IP.4
Chen, Li	CA	IAC-19.D1.IP.7
Chen, Linjie	CA	IAC-19.B4.2.11
Chen, Linjie	CA	IAC-19.A3.2B.1
Chen, Michelle	CA	IAC-19.B6.IP.4
Chen, Nir	CA	IAC-19.A5.2.13
Chen, Ruida	A	IAC-19.C4.10.13
Chen, Tongtong	CA	IAC-19.D1.1.5
Chen, Wen	CA	IAC-19.A7.2.2
Chen, Wenjing	CA	IAC-19.D2.4.7
Chen, Yen-Sen	A	IAC-19.C4.2.10
Chen, Yun	CA	IAC-19.D5.IP.5
Cheney, Thomas	A	IAC-19.D6.1.1
Cheney, Thomas	A	IAC-19.E2.2.5
Cheney, Thomas	A	IAC-19.D6.3.9
Cheng, Cheng	A	IAC-19.C4.IP.4
CHENG, Jiming	A	IAC-19.C4.IP.6
Cheng, Lin	CA	IAC-19.C1.2.12
Cheng, Lin	A	IAC-19.C1.9.7
Cheng, Ming-Chih	A	IAC-19.B1.1.4
Cheng, Samuel	CA	IAC-19.B4.IP.35
Cheng, ZhengAi	A	IAC-19.C3.1.8
Cheng long, Rao	CA	IAC-19.E6.3.8
Cheniuntai, Nikita	CA	IAC-19.A5.3-B3.6.9
Chern, Rock Jeng-Shing	CA	IAC-19.D6.3.10
Chernikova, Anna	CA	IAC-19.A1.3.5
Cherniy, Ivan	A	IAC-19.C4.4.3
Chernov, Kirill	CA	IAC-19.B4.IP.21
Chernykh, Irina	A	IAC-19.E7.2.7
Cherrington, Emil	CA	IAC-19.B1.6.2
Cheung, Kar-Ming	A	IAC-19.B2.4.10
Cheung, Kar-Ming	A	IAC-19.B2.5.6
Cheung, Sze-Leung	CA	IAC-19.E1.6.9
Cheung, Sze-Leung	CA	IAC-19.E5.5.5
Chhattani, Sparsh	CA	IAC-19.A1.8.1

Name	Role	Paper
Chibing, Shen	A	IAC-19.C4.9.9
Chierici, Alessandro	A	IAC-19.A7.1.6
Chierici, Alessandro	A	IAC-19.A3.3B.7
Chierici, Alessandro	CA	IAC-19.B1.3.2
Chierici, Alessandro	A	IAC-19.B2.4.2
Chikazawa, Takuya	A	IAC-19.C1.2.6
Ching, Michael	A	IAC-19.B3.7.3
Chmielewski, Artur B.	CA	IAC-19.E5.3.2
Cho, Dong-Hyun	CA	IAC-19.B6.IP.12
Cho, Gyusik	CA	IAC-19.C4.1.12
CHO, JEONG HWAN	CA	IAC-19.A2.7.7
Cho, Kie Joo	CA	IAC-19.C4.IP.13
Cho, Mengu	CA	IAC-19.B2.2.7
CHO, MENGU	A	IAC-19.E1.4.1
CHO, MENGU	CA	IAC-19.B4.7.6
Cho, Yeon	CA	IAC-19.A2.IP.7
Cho, Yeon	CA	IAC-19.A2.7.7
Cho, Yuichiro	CA	IAC-19.A3.4B.9
Choe, Nammi	A	IAC-19.E5.2.3
Choi, Iksung	CA	IAC-19.C2.IP.9
Choi, Jinyoung	A	IAC-19.E7.1.10
Choi, Joon Min	A	IAC-19.C3.1.2
Choi, Mirue	A	IAC-19.B6.2.3
Choi, Sang	A	IAC-19.D1.3.9
Choi, Sang	A	IAC-19.D3.2B.9
Choi, Seok Weon	A	IAC-19.A3.2B.11
Choksi, Nishant	A	IAC-19.E6.4.4
Chong, Wen Yong, Benedict	CA	IAC-19.B1.4.2
Chornick, Josh	CA	IAC-19.E2.4.10
Chou, Jill, C.-Y.	CA	IAC-19.B1.1.4
Choudhuri, Ahsan	CA	IAC-19.B4.6A.12
Chougule, Shreyanka B	CA	IAC-19.B2.6.6
Chowdhary, Amit	CA	IAC-19.E2.3-GTS.4.9
Chowdhury, Sreemon	CA	IAC-19.C2.5.4
Christensen, Carissa	CA	IAC-19.E6.2.2
Christensen, Carissa	CA	IAC-19.E3.3.1
Christensen, Ian	CA	IAC-19.E3.1.5
Christensen, Ian	CA	IAC-19.E6.2.1
Christensen, Ian	CA	IAC-19.E3.IP.6
Christensen, Ian	A	IAC-19.D4.5.11
Christian, Carol	A	IAC-19.A7.1.2
Christiansen, Carissa	CA	IAC-19.A6.8.9
Chu, Min	CA	IAC-19.C2.4.12
Chu, Phil	CA	IAC-19.A3.3B.6
Chudinov, Nikita	CA	IAC-19.B3.4-B6.4.1
Chujo, Toshihiro	CA	IAC-19.C2.7.8
Chung, Michael	CA	IAC-19.E1.1.5
Chung, Seungmi	A	IAC-19.E1.6.3
Chung, Soon-Jo	CA	IAC-19.B6.3.8
Chung, Soon-Jo	CA	IAC-19.C1.7.5
Chung, Soyoung	CA	IAC-19.E3.1.5
Chung, Soyoung	A	IAC-19.E3.IP.6
Chupin, Thibaud	CA	IAC-19.A3.2C.6
Chupin, Thibaud	CA	IAC-19.A3.2C.8
Chusri, Sutee	CA	IAC-19.B5.3.9
Cialdai, Francesca	CA	IAC-19.A2.7.11
Ciancarelli, Carlo	CA	IAC-19.B1.2.8
Ciancarelli, Carlo	CA	IAC-19.B4.7.3
Ciancone, Michael	A	IAC-19.E4.1.9
Ciancone, Michael	CA	IAC-19.E4.2.1
Ciardullo, Christina	CA	IAC-19.A5.3-B3.6.9
Ciccacci, Leonardo	CA	IAC-19.C2.5.6
Ciccarelli, Silvia	A	IAC-19.E3.2.6
Ciccarelli, Silvia	A	IAC-19.E3.6.4
Ciccolella, Antonio	CA	IAC-19.B5.2.3
Cicconi, Alessandro	CA	IAC-19.A2.7.11
Cichan, Timothy	A	IAC-19.A5.1.2
Cieslinski, Dawid	CA	IAC-19.D2.6.8
Ciezki, Helmut	CA	IAC-19.C4.9.1
Cilliers, Jan	CA	IAC-19.C2.IP.10
Ciminieri, U B	CA	IAC-19.D1.1.3
Cinarelli, Davide	CA	IAC-19.B5.3.4
Cinelli, Ilaria	A	IAC-19.A1.3.19
Cinquepalmi, Luca	CA	IAC-19.B5.3.4
CIPOLLA, Valerio	A	IAC-19.A6.4.1

Name	Role	Paper
Cipolletta, Alessandro	CA	IAC-19.A2.6.8
Circi, Christian	CA	IAC-19.C1.8.1
Cirelli, Renato	CA	IAC-19.D1.1.8
Cirelli Santos, Gustavo	A	IAC-19.D2.IP.16
Cirina, Cristiana	CA	IAC-19.E6.2.4
Ciufolini, Ignazio	A	IAC-19.A2.1.4
Ciurzynski, Miroslaw	CA	IAC-19.B4.6B.2
Claessens, Dirk	CA	IAC-19.D1.5.1
Clar, Richard	A	IAC-19.E5.3.7
Clark, Kyle	CA	IAC-19.E1.1.3
Clark, Matteo	CA	IAC-19.D4.5.15
Clark, Pamela E.	CA	IAC-19.B4.8.4
Clark, Ruaridh	CA	IAC-19.B4.3.10
Clarke, Kyle	CA	IAC-19.B4.IP.16
Clarke, Steve	A	IAC-19.A3.2A.1
Clatworthy, Kasia	CA	IAC-19.B1.1.10
Clawson, James	CA	IAC-19.B3.7.3
Clayton, Amanda	A	IAC-19.E1.5.10
Cleland, Keith	CA	IAC-19.A5.IP.4
Clement, Tinka	CA	IAC-19.A7.IP.5
Clerc, Philippe	A	IAC-19.E7.3.12
Close, Sigrid	CA	IAC-19.C3.4.10
Cloutis, Ed	CA	IAC-19.A3.2B.6
Clément, Gilles	CA	IAC-19.A2.3.3
Coblentz, Maggie	A	IAC-19.E1.9.7
Cocco, Kevin	A	IAC-19.E1.2.4
Cocco, Magda	CA	IAC-19.E7.IP.16
Cocco, Magda	CA	IAC-19.D5.4.8
Cockrell Jr., Charles E.	A	IAC-19.D2.9-D6.2.4
Coderre, Kathleen	CA	IAC-19.A1.5.5
Coduti, Giovanni	CA	IAC-19.C4.4.10
Coello Marcelín, Víctor Iván	A	IAC-19.E7.IP.12
Coffey, Deirdre	CA	IAC-19.E1.4.6
Cohen, Alexander	CA	IAC-19.D4.4.7
Cohen, Luchino	CA	IAC-19.B3.3.1
Cohen, Marc M.	A	IAC-19.D6.1.11
Cohen, Marc M.	A	IAC-19.A1.7.7
Cohen, Marc M.	A	IAC-19.E5.1B.4
Cohen, Maureen	CA	IAC-19.D3.1.5
Cohen, Orr	CA	IAC-19.D4.2.8
Cohen, Orr	CA	IAC-19.A2.4.5
Cohen, Orr	CA	IAC-19.D3.IP.3
Cohen, Samuel	CA	IAC-19.C3.5-C4.7.10
Cohen, Stephen	A	IAC-19.D4.3.9
Cojocaru, Andrei Filip	CA	IAC-19.D2.6.11
Colagrossi, Andrea	CA	IAC-19.C1.3.2
Colagrossi, Andrea	A	IAC-19.C1.5.4
Colaprete, Anthony	CA	IAC-19.A3.1.6
Colaprete, Anthony	CA	IAC-19.B6.2.9
Colaprete, Anthony	CA	IAC-19.D3.2A.2
Coleshill, Elliott	CA	IAC-19.D1.3.4
Collange, Guillaume	CA	IAC-19.D2.1.5
Collaud, Xavier	CA	IAC-19.D1.5.9
Collettini, Luca	CA	IAC-19.B2.2.8
Collettini, Luca	CA	IAC-19.E1.3.8
Collettini, Luca	CA	IAC-19.B2.4.7
Collins, Peter	CA	IAC-19.B6.3.1
Collopy, Paul	CA	IAC-19.A5.4-D2.8.12
Colmenarejo, Pablo	A	IAC-19.A6.10-B4.10.9
Colombi, Francesco	A	IAC-19.C1.3.2
Colombo, Camilla	CA	IAC-19.C1.1.2
Colombo, Camilla	CA	IAC-19.A6.2.2
Colombo, Camilla	CA	IAC-19.A6.2.3
Colombo, Camilla	CA	IAC-19.C1.3.1
Colombo, Camilla	CA	IAC-19.C1.3.7
Colombo, Camilla	A	IAC-19.A6.4.2
Colombo, Camilla	CA	IAC-19.A6.4.6
Colombo, Camilla	CA	IAC-19.C2.5.2
Colombo, Camilla	A	IAC-19.A6.6.4
Colombo, Camilla	CA	IAC-19.E7.7.4
Colombo, María	CA	IAC-19.A3.3B.11
Colucci, Angelo	CA	IAC-19.D4.IP.11
Colvin, Thomas	A	IAC-19.E3.3.13
Cometto, Ferdinando	CA	IAC-19.C1.7.9
Compin, Matthieu	CA	IAC-19.A2.6.8

Name	Role	Paper
Concari, Paolo	CA	IAC-19.A3.4A.9
Concu, Raimondo	CA	IAC-19.A7.2.3
Concu, Raimondo	CA	IAC-19.A6.IP.7
Conde, Al	CA	IAC-19.D3.4.6
Condori, Marcelo	CA	IAC-19.E1.IP.18
Congdon, Elizabeth	CA	IAC-19.C2.4.3
Congdon, Elizabeth	CA	IAC-19.C2.IP.11
Congdon, Elizabeth	A	IAC-19.D1.5.3
Conkey, Shelly	A	IAC-19.C2.4.3
Conkey, Shelly	CA	IAC-19.C2.IP.11
Conkey, Shelly	CA	IAC-19.D1.5.3
Connolly, John	CA	IAC-19.A5.4-D2.8.6
Constantinescu, Cristian-Emil	CA	IAC-19.D2.6.11
Conteh, Alimamy Lewis Seray	CA	IAC-19.E3.IP.2
Contestabile, Giampiero	CA	IAC-19.B2.2.4
Conti, Gabriele	A	IAC-19.B6.3.5
Conti, Gabriele	CA	IAC-19.A3.2C.8
Conticello, Simon Silvio	CA	IAC-19.B4.4.4
Contractor, Noshir	CA	IAC-19.A1.1.6
Contractor, Noshir	CA	IAC-19.A1.IP.3
Contreras, Joel	CA	IAC-19.B4.6A.7
Contreras, Rafael	CA	IAC-19.B4.IP.24
Cook, Tristan	CA	IAC-19.B5.1.5
Cooke, Mike	CA	IAC-19.A2.5.3
Cooper, John	CA	IAC-19.A5.3-B3.6.6
Cooper, Lavida	CA	IAC-19.B2.7.11
Copeland, Michael	CA	IAC-19.A6.4.8
Copper, Kenneth	CA	IAC-19.C4.3.5
Coppotelli, Giuliano	CA	IAC-19.C2.5.1
Coral, Giulio	A	IAC-19.C4.IP.15
Corbelli, Alberto	CA	IAC-19.B5.3.4
Corbet, Sarah	CA	IAC-19.C3.4.2
Corbo, Salvatore	A	IAC-19.B4.5.11
Cordero, Federico	CA	IAC-19.A3.4A.6
Cordero, Federico	CA	IAC-19.B4.8.12
Cordie, Troy	A	IAC-19.D3.IP.5
Corey, Ronald	CA	IAC-19.A5.4-D2.8.7
Corley, Bill	CA	IAC-19.B5.2.4
Corliss, James	A	IAC-19.A3.3A.3
Cornara, Stefania	A	IAC-19.C1.1.5
Cornara, Stefania	CA	IAC-19.D1.2.5
Cornwell, Donald	CA	IAC-19.B2.7.12
Corona, Cristiano	CA	IAC-19.A2.6.9
Corpaccioli, Luca	CA	IAC-19.D1.2.1
Corpino, Sabrina	A	IAC-19.D1.1.7
Corpino, Sabrina	CA	IAC-19.C2.3.1
Corpino, Sabrina	CA	IAC-19.C4.4.9
Corpino, Sabrina	CA	IAC-19.B4.7.5
Corpino, Sabrina	CA	IAC-19.B6.1.3
Corpino, Sabrina	CA	IAC-19.B4.6B.4
Corradi, Paolo	CA	IAC-19.B5.2.5
Corradino, Filippo	CA	IAC-19.D1.1.1
Correale, Giuseppe	A	IAC-19.E5.2.7
Corredor, Giovanni	A	IAC-19.B4.1.6
Correia Mendonça, Helena	A	IAC-19.E7.IP.16
Correia Mendonça, Helena	A	IAC-19.D5.4.8
Cortesão, Marta	CA	IAC-19.A1.6.10
Cortés, Rolando	A	IAC-19.C1.IP.1
Cosi, Massimo	CA	IAC-19.B1.3.2
Cosmas Raymond, Kiruki	A	IAC-19.D1.3.2
Cossavella, Fabiana	CA	IAC-19.B6.3.2
Costa, Alexander	CA	IAC-19.C2.9.3
Costa, Maria	CA	IAC-19.B5.2.6
Costa, Tigh	CA	IAC-19.A3.3B.6
Costa, Tighe	CA	IAC-19.A3.5.5
Costa Goulart, Alexandre	CA	IAC-19.D2.IP.16
Costantini, Lorenzo	CA	IAC-19.A1.2.3
Costello, Kirt	CA	IAC-19.B3.3.1
Cosyn, Philippe	CA	IAC-19.E4.2.11
Cote, Judith	CA	IAC-19.D1.2.5
Cote, Kristen	A	IAC-19.A2.1.3
Cote, Kristen	A	IAC-19.A3.3B.12
Cote, Kristen	CA	IAC-19.E1.IP.23
Cotronei, Vittorio	CA	IAC-19.B3.3.1
Cottrell, Richard	CA	IAC-19.C2.IP.2

Name	Role	Paper
Cotugno, Biagio	CA	IAC-19.B4.2.8
Couper, Mitchell	CA	IAC-19.A6.6.6
Court, Roman	CA	IAC-19.A3.2A.4
Courtemanche, Matthew	CA	IAC-19.A1.4.6
Coustenis, Athena	A	IAC-19.A7.2.5
Coustenis, Athena	A	IAC-19.A1.6.12
Couto Oliveira, Geraldo Magela	A	IAC-19.A5.IP.3
Coué, Philippe	A	IAC-19.E1.3.10
Covello, Chase	CA	IAC-19.B3.IP.1
Cowan, Devin	CA	IAC-19.A1.1.11
Coward, Caroline	A	IAC-19.E4.1.4
Cowen, Devin	CA	IAC-19.A1.IP.4
Cowley, Aidan	CA	IAC-19.D4.1.2
Cowley, Aidan	CA	IAC-19.C3.3.2
Cowley, Aidan	A	IAC-19.A3.2C.3
Cowper, Noah	CA	IAC-19.B2.7.11
Cox, Andrew	CA	IAC-19.A3.2C.9
Cox, Ann	CA	IAC-19.B4.2.2
Cox, Charles	CA	IAC-19.A6.5.1
Cox, Renee	CA	IAC-19.B4.5.5
Cozzoni, Barbara	CA	IAC-19.A3.4A.6
Crable, Vicki	CA	IAC-19.B3.1.7
Craddock, Christopher	CA	IAC-19.B2.3.6
Craddock, Christopher	A	IAC-19.B4.5.12
Craig, Douglas	CA	IAC-19.A3.1.2
Craig, Douglas	CA	IAC-19.E3.6.5
Craig, Michael	CA	IAC-19.A1.1.1
Craig, Scott	CA	IAC-19.D2.9-D6.2.6
Cramarossa, Augusto	CA	IAC-19.E6.2.4
Crane, Keith	CA	IAC-19.E6.2.12
Crawford, Meagan	A	IAC-19.E6.1.14
Crawford, Will	CA	IAC-19.D2.1.7
Creasey, Jeremy	CA	IAC-19.D6.1.3
Creech, Jessica	CA	IAC-19.B5.3.8
Creech, Steve	A	IAC-19.A5.4-D2.8.1
Cripe, Douglas	CA	IAC-19.B1.6.3
Crippa, Roberto	CA	IAC-19.A4.2.7
Crisafi, Alessandro	CA	IAC-19.A1.2.8
Crisafi, Alessandro	CA	IAC-19.A2.6.9
Crisafulli, Jim	A	IAC-19.A3.2C.1
Crisconio, Marino	CA	IAC-19.A2.6.9
Crisman, Keith	A	IAC-19.A1.3.13
Crisman, Keith	CA	IAC-19.B3.IP.1
Crisp, Nicholas H.	CA	IAC-19.A2.1.10
Crisp, Nicholas H.	CA	IAC-19.C1.1.3
Crisp, Nicholas H.	A	IAC-19.B4.6A.2
Crisp, Nicholas H.	CA	IAC-19.C2.6.1
Critchley-Marrows, Joshua	A	IAC-19.B2.8-GTS.3.1
Croft, Steve	CA	IAC-19.A4.1.1
Croft, Steve	A	IAC-19.A4.1.2
Croft, Steve	CA	IAC-19.A4.1.3
Croft, Steve	CA	IAC-19.A4.1.4
Croft, Steve	CA	IAC-19.A4.1.17
Cropp, Alexander	CA	IAC-19.C1.7.9
Crosby, Norma	CA	IAC-19.A1.5.1
Cross, Alexandra	CA	IAC-19.E3.2.10
Cross, Alexandra	CA	IAC-19.B3.7.3
Cross, Mai'a	A	IAC-19.E4.3.8
Cross, Matthew	A	IAC-19.E1.IP.6
Cross, Matthew	CA	IAC-19.A3.2C.7
Crosse, Brian	CA	IAC-19.A4.1.2
Crowell, Irene	CA	IAC-19.B6.3.8
Crowley, Sean	A	IAC-19.C4.8-B4.5A.7
Cruz, Hugo	CA	IAC-19.B4.6A.5
Csank, Jeffrey	A	IAC-19.C3.4.3
Cuba, Gerson	CA	IAC-19.E1.IP.18
Cucinella, Giovanni	CA	IAC-19.B5.3.4
Cuellar, Angel	A	IAC-19.E4.2.2
Cuellar, Angel	CA	IAC-19.D2.7.9
Cuffolo, Aurélien	CA	IAC-19.C1.7.9
Cuffolo, Aurélien	CA	IAC-19.C1.8.3
Culbreth, William	CA	IAC-19.C3.5-C4.7.5
Cullen, David	CA	IAC-19.A2.5.3
Cullen, Jay	CA	IAC-19.A1.6.13
Culler, Jessica	A	IAC-19.E1.6.13
Culton, John	A	IAC-19.A5.1.13
Cunha, Sergio	CA	IAC-19.B4.6A.5
Cunha Martins, Paulo Gabriel	CA	IAC-19.E1.IP.8
Cunniff, David	CA	IAC-19.B6.3.12
Cunningham, Thomas	A	IAC-19.B4.IP.23
Cupido, Collin	CA	IAC-19.B4.6B.2
Curianò, Federico	CA	IAC-19.B2.2.8
Curianò, Federico	CA	IAC-19.E1.3.8
Curianò, Federico	CA	IAC-19.A6.10-B4.10.2
CUROT, Philippe	CA	IAC-19.D2.IP.6
Curreli, Davide	CA	IAC-19.D4.4.7
Curreli, Fabio	CA	IAC-19.B2.5.2
Curti, Fabio	CA	IAC-19.C1.6.11
Curti, Fabio	CA	IAC-19.B4.IP.29
Curti, Fabio	CA	IAC-19.C1.9.5
Cutajar, Denis	CA	IAC-19.A6.9.9
Cutri, Roc M.	CA	IAC-19.A6.1.4
Cwik, Tom	CA	IAC-19.A3.5.5
Cwilichowska, Natalia	A	IAC-19.A1.7.15
Czupalla, Markus	CA	IAC-19.E2.2.8
D		
D'Amico, Arnaldo	CA	IAC-19.A1.2.8
D'Amore, Giuseppe	CA	IAC-19.A6.7.9
D'ANTONIO, RACHELE MARIA	CA	IAC-19.A6.IP.22
D'Orgeville, Celine	A	IAC-19.A6.4.8
D'Souza, Sarah	CA	IAC-19.C1.9.1
D. Camba, Jorge	CA	IAC-19.D4.1.6
Da, Ting	A	IAC-19.B1.IP.17
da Costa, Rodrigo	A	IAC-19.B2.6.1
Da Fonseca, Ijar	A	IAC-19.C2.3.7
da Mata, Henrique Oliveira	A	IAC-19.B6.IP.13
da Silva Curiel, Alex	CA	IAC-19.B1.1.10
da Silva Curiel, Alex	CA	IAC-19.B4.4.1
da Silva Curiel, Alex	CA	IAC-19.B4.7.1
da Silva Pais Cabral, Francisco	CA	IAC-19.C1.IP.7
da Silva Pais Cabral, Francisco	CA	IAC-19.C1.7.12
da Silveira Rêgo, Israel	CA	IAC-19.D2.6.3
Dachev, Tsvetan	CA	IAC-19.B4.4.8
Dachwald, Bernd	CA	IAC-19.B4.8.12
Dadwal, Viva	CA	IAC-19.E7.2.3
Daeter, Marjolein	A	IAC-19.A3.IP.17
Daeter, Marjolein	CA	IAC-19.A7.IP.5
Dafnis, Athanasios	CA	IAC-19.C2.7.2
Dahan, Danny	CA	IAC-19.A5.2.13
Dahl, Mary	CA	IAC-19.C3.3.8
Dai, Honghua	CA	IAC-19.C2.IP.3
Dai, Kun	CA	IAC-19.A6.IP.2
Dai, Michael	CA	IAC-19.D1.4A.3
Dai, Zhongquan	CA	IAC-19.A1.1.10
Dailey, Nathaniel	A	IAC-19.E3.4.10
Dakoju, Nikhil	A	IAC-19.C2.6.5
DalBello, Richard	CA	IAC-19.B3.2.11
Dalbins, Janis	CA	IAC-19.B4.8.7
Dalfó Ferrer, Blanca	CA	IAC-19.A2.6.8
Dalla Vedova, Florio	CA	IAC-19.A6.4.2
Dalla Vedova, Florio	CA	IAC-19.A6.4.6
Dalla Vedova, Florio	CA	IAC-19.C2.5.2
Daly, Michael	CA	IAC-19.A3.3B.12
Damann, Volker	CA	IAC-19.D4.2.8
Damann, Volker	CA	IAC-19.B3.4-B6.4.8
Damann, Volker	CA	IAC-19.A1.4.11
Damann, Volker	CA	IAC-19.D3.IP.3
Damann, Volker	CA	IAC-19.A2.7.16
Damby, David	CA	IAC-19.A1.7.16
Damiao, Samara	CA	IAC-19.D1.4A.5
Damme, Friedrich	CA	IAC-19.A5.4-D2.8.9
Damsongsaeng, Prapanpong	CA	IAC-19.A2.3.11
Danaila, Sterian	A	IAC-19.C4.9.5
Dang, Bitrus	CA	IAC-19.B5.2.9
Dangler, Doris	CA	IAC-19.A1.4.15
Dangoisse, Carole	CA	IAC-19.A1.1.9
Daniel, Nathan	CA	IAC-19.D1.4B.1
Dannemiller, Karen	CA	IAC-19.A1.8.3

Name	Role	Paper
Dannenberg, Kristine	A	IAC-19.B5.1.6
Danous, Patrick	CA	IAC-19.C4.1.8
Dantas, Dolvim	CA	IAC-19.D2.IP.11
Daou, Doris	CA	IAC-19.E5.4.4
Darcet, Timothée	CA	IAC-19.C4.6.2
Darkow, Nicolas	CA	IAC-19.D2.5.10
Das, D.K	A	IAC-19.B1.1.1
Das, Kausiksankar	CA	IAC-19.A2.3.9
Das, Krishti	A	IAC-19.E2.1.3
Das, Rajesh	CA	IAC-19.B1.5.6
Das Rajkakati, Priyanka	A	IAC-19.B2.6.8
Das-Stuart, Ashwati	CA	IAC-19.D1.4A.3
Dasgupta, Upasana	A	IAC-19.E7.4.6
Dasgupta, Upasana	A	IAC-19.E7.7.10
Dash, Sambit Supriya	CA	IAC-19.C4.IP.29
Dash, Sambit Supriya	A	IAC-19.C2.8.10
Dashan, Titus	CA	IAC-19.B5.2.9
Dauner, Johannes	CA	IAC-19.C1.8.9
Davenport, Robert	CA	IAC-19.E5.1A.1
Davenport, Robert	CA	IAC-19.A1.7.5
Davidson, Kyle	A	IAC-19.A5.3-B3.6.4
Davidson, Rosemary	CA	IAC-19.D1.2.2
Davis, Ab	CA	IAC-19.B4.3.12
Davis, Ab	CA	IAC-19.B6.3.2
Davis, Benjamin	A	IAC-19.E4.2.9
Davis, Benjamin	A	IAC-19.E4.3.6
Davis, Malcolm	A	IAC-19.E3.IP.7
Davis, Victoria	CA	IAC-19.C2.6.8
Davison, Stephen	CA	IAC-19.A1.4.3
Dawson, Shannon	CA	IAC-19.A1.8.4
Day, Brian	CA	IAC-19.A3.IP.6
de Almeida, Luiz Eduardo Nunes	CA	IAC-19.C4.IP.20
De Angelis, Massimo	A	IAC-19.E6.4.3
De Carlo, Paola	A	IAC-19.B2.1.3
de Cesare, Giampiero	CA	IAC-19.A1.6.6
de Cesare, Giampiero	CA	IAC-19.A2.7.6
De Cesare, Mario	CA	IAC-19.C2.6.6
de Chambure, Daniel	A	IAC-19.D2.1.6
De Filippis, Federico	CA	IAC-19.C2.6.6
De Filippis, Federico	CA	IAC-19.D2.6.7
De Filippis, Luca	CA	IAC-19.B4.6A.6
de Freitas Bart, Ryan	CA	IAC-19.D1.2.2
de Groot, Zeger	CA	IAC-19.A3.2B.1
de Groot, Zeger	CA	IAC-19.B4.9-GTS.5.4
De Jaeger, Christophe	CA	IAC-19.E5.3.3
de Jong, Nicolás	A	IAC-19.E2.1.5
De Keyser, Johan	CA	IAC-19.B4.2.13
de la Croix, Jean-Pierre	CA	IAC-19.C1.7.5
De La Llave, Rafael	CA	IAC-19.C1.4.9
De La Torre, Lizbeth B.	A	IAC-19.E5.3.2
de la Torre Aceves, Andrea	CA	IAC-19.A1.4.12
de Leon, Julia	CA	IAC-19.A3.4B.5
de Leon, Pablo	A	IAC-19.E4.1.3
de Leon, Pablo	CA	IAC-19.D2.3.5
De Leon, Pablo	CA	IAC-19.B3.IP.2
De Leon, Pablo	CA	IAC-19.D5.IP.1
De Leon, Pablo	CA	IAC-19.B3.7.7
de Leon, Pablo	CA	IAC-19.B3.7.10
De Maestri, Maria Elena	A	IAC-19.E7.2.5
De Marco, Greta	A	IAC-19.A7.2.10
de Miguel, Alberto G.	CA	IAC-19.C2.2.3
de Neufville, Richard	CA	IAC-19.B3.2.12
De Nicola, Felice	CA	IAC-19.D2.5.6
De Nolfo, Georgia	CA	IAC-19.B4.9-GTS.5.8
de Oliveira, Élcio Jeronimo	A	IAC-19.D2.6.3
de Oliveira, Élcio Jeronimo	A	IAC-19.D2.7.12
De Oliveira Bittencourt Neto, Olavo	A	IAC-19.E7.5.5
De Padova, Stefano	CA	IAC-19.B6.3.1
De Paula, Ramon P.	A	IAC-19.A3.3A.4
de Paula Sales, Thiago	CA	IAC-19.C2.3.7
de Paulis, Daniela	A	IAC-19.E5.3.5
de Raucourt, Sébastien	CA	IAC-19.A3.3A.5
De Sanctis, Mauro	CA	IAC-19.B2.3.1
De Stefano Fumo, Mario	CA	IAC-19.D1.1.1
De Stefano Fumo, Mario	A	IAC-19.D2.5.6

Name	Role	Paper
De Vendictis, Laura	CA	IAC-19.C1.1.5
de Vet, Sebastiaan	CA	IAC-19.E5.5.4
de Vos van Steenwijk, Reynolt	CA	IAC-19.A6.6.9
de Vries, Herie	CA	IAC-19.E1.IP.4
de Vries, Liselotte	CA	IAC-19.E5.2.1
de Weck, Olivier	CA	IAC-19.B3.2.12
de Weck, Olivier	CA	IAC-19.B4.1.21
de Weck, Olivier	CA	IAC-19.C2.7.12
de Wet, Wouter	CA	IAC-19.A1.5.2
de Wilde, Don	CA	IAC-19.A6.2.1
de Winter, Bram	A	IAC-19.A7.IP.5
Deason, Wesley	CA	IAC-19.C3.5-C4.7.7
DeBoer, David	CA	IAC-19.A4.1.1
DeBoer, David	CA	IAC-19.A4.1.3
DeBoer, David	CA	IAC-19.A4.1.5
DeChurch, Leslie	A	IAC-19.A1.1.6
DeChurch, Leslie	CA	IAC-19.A1.IP.3
DeCoito, Isha	CA	IAC-19.E1.1.4
Decoopman, Clementine	CA	IAC-19.D4.IP.10
Decorde, Baptiste	CA	IAC-19.C4.6.2
Dedrick, James	CA	IAC-19.C4.4.1
Dee, Jan Clarence	CA	IAC-19.A3.1.5
Dees, Stacy	CA	IAC-19.E1.5.3
Deffacis, Maurizio	CA	IAC-19.A1.2.8
Defore, Kyla	A	IAC-19.A3.IP.4
Degiognet, Marie	CA	IAC-19.D1.4B.1
Degtiarov, Maksym	CA	IAC-19.A3.IP.1
Degtyarev, Alexander	CA	IAC-19.A3.IP.1
Dei Tos, Diogene Alessandro	CA	IAC-19.C1.4.7
Deiana, Gian Luigi	CA	IAC-19.A7.2.3
Deihl, Jessica	A	IAC-19.E7.3.17
Deininger, William	A	IAC-19.B4.2.3
Dejana, Mariangela	A	IAC-19.B5.1.4
DeKlotz, Michael	CA	IAC-19.B3.1.8
del Barco, María	CA	IAC-19.E1.3.4
DEl Bianco, Alberto	CA	IAC-19.D6.3.4
Del Mastro, Antonio	CA	IAC-19.D5.2.5
del Portillo, Inigo	A	IAC-19.B2.2.11
Del Rio Vera, Jorge	CA	IAC-19.E3.1.1
Del Rio Vera, Jorge	CA	IAC-19.B3.3.2
Del Vecchio, Antonio	A	IAC-19.C2.6.6
Delaroche, Christophe	CA	IAC-19.A2.6.1
DeLatte, Danielle	A	IAC-19.E1.6.7
Delaurentis, Daniel	CA	IAC-19.A5.1.12
Delaurentis, Daniel	CA	IAC-19.D1.4A.3
Delaurentis, Daniel	CA	IAC-19.A3.IP.13
DeLee, C. Hudson	CA	IAC-19.D1.6.1
Deleflie, Florent	CA	IAC-19.C1.3.10
Delfini, Andrea	CA	IAC-19.E2.4.6
Delfini, Andrea	A	IAC-19.C2.6.9
Delfini, Andrea	A	IAC-19.C2.8.2
Delgado, Julie	CA	IAC-19.C4.6.2
Dell' Aversana, Pasquale	CA	IAC-19.D2.6.7
Della Corte, Vincenzo	CA	IAC-19.B4.8.8
Delpech, Michel	CA	IAC-19.A3.4B.8
DeLuna, Alan T.	A	IAC-19.B3.5.1
DeMarines, Julia	A	IAC-19.A4.1.17
DeMarines, Julia	CA	IAC-19.A4.2.10
Demertzi, Athena	CA	IAC-19.A1.2.4
Demertzi, Athena	CA	IAC-19.A1.2.5
Dempsey, James	CA	IAC-19.D3.2A.10
Deng, Jianfeng	A	IAC-19.A7.2.2
Denis, Gil	A	IAC-19.B5.2.3
Dennehy, Cornelius	CA	IAC-19.D2.9-D6.2.5
Denning, Kathryn	A	IAC-19.A4.2.4
Denning, Kathryn	CA	IAC-19.A4.2.15
Denning, Kathryn	CA	IAC-19.A4.IP.2
Dentis, Matteo	A	IAC-19.B4.6A.6
Dentis, Matteo	A	IAC-19.C1.6.12
Deodhar, Akshay	CA	IAC-19.E2.4.9
DePaula, Luiz Alberto	CA	IAC-19.C1.3.3
Dequal, Daniele	CA	IAC-19.B2.2.4
Derechin, Alexander G.	A	IAC-19.B3.2.2
Derickson, Justin	CA	IAC-19.A2.3.9
Derleth, Jason	CA	IAC-19.D4.IP.5

Name	Role	Paper
Derz, Uwe	CA	IAC-19.D1.2.1
Descamps, Arthur	A	IAC-19.C2.6.7
Deshpande, Manohar	CA	IAC-19.B2.7.11
Dessy, Emilie	CA	IAC-19.A1.1.9
Desvallées, Patrice	CA	IAC-19.E6.4.11
Dethlefsen, Thea	A	IAC-19.E7.1.7
Detrell, Gisela	A	IAC-19.A1.7.3
Detrell, Gisela	CA	IAC-19.A1.8.5
Detsis, Emmanouil	CA	IAC-19.A3.3A.11
Detsis, Emmanouil	CA	IAC-19.C4.4.11
Detsis, Emmanouil	CA	IAC-19.C2.7.2
Detsis, Emmanouil	CA	IAC-19.A5.4-D2.8.9
Devalaraju, Venkata	CA	IAC-19.C4.1.13
Devalaraju, Venkata	CA	IAC-19.A7.2.7
Devecchi, Matteo	CA	IAC-19.A5.1.9
Devecchi, Matteo	CA	IAC-19.B3.4-B6.4.10
Devecchi, Matteo	CA	IAC-19.A3.IP.8
Devecchi, Matteo	CA	IAC-19.A1.7.14
Devries, Kellen	A	IAC-19.C2.IP.16
Dhavamani, Vigneshwar	CA	IAC-19.C3.3.6
Dhekane, Shariva	CA	IAC-19.E2.3-GTS.4.4
Dhital, Bal	A	IAC-19.A1.4.12
Dhital, Bal	A	IAC-19.A1.IP.15
Dhital, Bal	A	IAC-19.E5.IP.10
Dhusu, Rajesh	CA	IAC-19.E1.IP.15
Di Benedetto, Mauro	CA	IAC-19.B2.7.2
Di Carlo, Marilena	CA	IAC-19.C1.2.1
Di Carmine, Emiliano	CA	IAC-19.B1.3.2
Di Clemente, Marco	CA	IAC-19.D1.1.1
Di Giovanni, Adriano	CA	IAC-19.B4.2.6
Di Girolamo, Filippo Giorgio	CA	IAC-19.A1.3.3
di Ienno, Davide	CA	IAC-19.E1.3.8
di Ienno, Davide	CA	IAC-19.B2.4.7
di Lauro, Francesco	A	IAC-19.E1.9.13
Di Lieto-Danes, Jack	CA	IAC-19.A5.1.9
Di Lieto-Danes, Jack	CA	IAC-19.A1.5.8
Di Lizia, Pierluigi	CA	IAC-19.A6.2.3
Di Lizia, Pierluigi	CA	IAC-19.C1.3.5
Di Lizia, Pierluigi	CA	IAC-19.A6.7.9
Di Lizia, Pierluigi	CA	IAC-19.A6.9.9
Di Martino, Giuseppe	A	IAC-19.C4.5.7
Di Martino, Giuseppe	CA	IAC-19.C2.4.4
di Palo, Luigi	CA	IAC-19.E1.3.8
di Palo, Luigi	CA	IAC-19.B2.4.7
Di Pippo, Simonetta	CA	IAC-19.E3.1.1
Di Pippo, Simonetta	CA	IAC-19.B3.3.2
Di Pippo, Simonetta	A	IAC-19.E3.2.2
Di Roberto, Riccardo	CA	IAC-19.C4.8-B4.5A.5
Di Ruscio, Andrea	A	IAC-19.B2.7.2
Di Sotto, Emanuele	A	IAC-19.D2.5.11
Di Stefano, Ivan	A	IAC-19.A7.3.8
Di Tana, Valerio	CA	IAC-19.B4.2.8
Di Tana, Valerio	A	IAC-19.A2.6.10
Diallo, Ousmane	A	IAC-19.B3.3.1
Diamond, Bill	CA	IAC-19.A4.1.5
Diani, Fiammetta	CA	IAC-19.B2.6.1
Dias Pereira, Yuri Matheus	A	IAC-19.D1.5.7
Diaz, Francisco	CA	IAC-19.D1.4B.4
Diaz, Lluc	A	IAC-19.E6.1.5
Diaz, Lluc	CA	IAC-19.E6.3.4
Diaz, Manuel J.	CA	IAC-19.D2.4.10
Diaz de Cerio Goenaga, Rainer	CA	IAC-19.B4.6B.10
Dick, Kevin	CA	IAC-19.E2.4.10
Dick, Kevin	CA	IAC-19.B2.IP.4
Dick, Kevin	CA	IAC-19.E1.IP.26
Dickey, Chuck	A	IAC-19.E7.4.12
Dickson, David	A	IAC-19.A3.2C.4
Dierckxsens, Mark	CA	IAC-19.A1.5.1
Diet, Fabian	CA	IAC-19.B6.3.11
Dietrich, Peter	CA	IAC-19.A3.3B.12
Diez, Eduard	CA	IAC-19.D2.7.11
Diez, José Manuel	A	IAC-19.E2.3-GTS.4.8
Digalaki, Eleni	CA	IAC-19.B3.8-GTS.2.6
Digges, James	CA	IAC-19.E6.2.7
Diggewadi, Abhishek	CA	IAC-19.D4.2.8
Diggewadi, Abhishek	CA	IAC-19.D3.IP.3
Dillard, Mark	CA	IAC-19.B3.7.3
Dimassi, Adli	CA	IAC-19.A3.IP.22
Dindodi Ramesh, Niranjan	CA	IAC-19.C3.2.12
Dindodi Ramesh, Niranjan	A	IAC-19.B4.6B.12
Dingemans, Arlene	CA	IAC-19.A7.IP.5
Dinges, David	CA	IAC-19.A1.1.1
Dinges, David	CA	IAC-19.A1.1.2
Dinkelaker, Aline N.	CA	IAC-19.B4.6A.1
Dipert, Adam	A	IAC-19.E5.3.8
Diserens, Samuel	A	IAC-19.A6.2.6
Dittel Tortós, Valeria	CA	IAC-19.E1.3.4
Dittmann, Philipp	CA	IAC-19.D1.4A.6
Divsalar, Donya Naz	A	IAC-19.A1.4.6
Diwan, Ritika	CA	IAC-19.C2.2.10
Dixon, Ben	CA	IAC-19.B2.7.12
Dixon, Trinesha	CA	IAC-19.E1.3.1
Djojodihardjo, Harijono	A	IAC-19.C2.3.2
Dmitriev, Vladimir	CA	IAC-19.B3.4-B6.4.6
Dobynde, Mikhail	A	IAC-19.A1.5.10
Dobynde, Mikhail	A	IAC-19.A1.5.11
Dobynde, Mikhail	CA	IAC-19.B4.7.4
Dodge, Michael	A	IAC-19.E7.4.8
Dodge, Michael	A	IAC-19.A6.8.8
Doejode, Shreyas	CA	IAC-19.D2.5.4
Doerksen, Kelsey	A	IAC-19.D5.3.1
Doggett, Bill	A	IAC-19.C2.2.11
DOKI, Shotaro	CA	IAC-19.A1.IP.2
Dolado Perez, Juan Carlos	CA	IAC-19.A6.8.1
Dolado Perez, Juan Carlos	CA	IAC-19.A6.9.5
Doldirina, Catherine	A	IAC-19.E7.2.4
Dolgopolov, Anton	A	IAC-19.E3.3.1
Dolkens, Dennis	CA	IAC-19.B1.3.9
Dolmans, Sharon	CA	IAC-19.D5.2.9
Dolmans, Sharon	CA	IAC-19.E6.3.6
Dominguez-Adame, Ignacio	CA	IAC-19.C1.IP.7
Domínguez-González, Raúl	CA	IAC-19.B6.1.7
Donahue, Benjamin	CA	IAC-19.D2.1.3
Donahue, Benjamin	A	IAC-19.A5.1.1
Donaldson, Jennifer	CA	IAC-19.B2.7.10
Donati, Alessandro	CA	IAC-19.A2.7.1
Donati, Alessandro	CA	IAC-19.A2.7.11
Dong, Haozhi	CA	IAC-19.B2.7.11
Dong, Wenbo	CA	IAC-19.A2.5.11
Donitz, Benjamin	A	IAC-19.E2.3-GTS.4.1
Donitz, Benjamin	CA	IAC-19.C3.3.1
Dorbath, Carina	CA	IAC-19.D2.5.7
Dordlofva, Christo	A	IAC-19.C2.5.11
Dordlofva, Christo	CA	IAC-19.C4.10.2
Dorji, Cheki	A	IAC-19.B4.7.6
Dougherty, Kerrie	A	IAC-19.E4.1.6
Doule, Ondrej	CA	IAC-19.A1.3.13
Doule, Ondrej	A	IAC-19.B3.IP.1
Dovzenko, Vladimir	CA	IAC-19.B3.4-B6.4.6
Downer, Bethany	A	IAC-19.E1.6.9
Downer, Bethany	A	IAC-19.E1.7.1
Downer, Bethany	A	IAC-19.E5.5.5
Doyle, Maeve	CA	IAC-19.C1.IP.16
Doyle, Scott	CA	IAC-19.C4.4.1
Doyle, Stephen E.	A	IAC-19.E4.2.1
Dragvik, Laila	A	IAC-19.E1.8.3
Drayson, Olivia	A	IAC-19.A2.6.8
Drego, Adelia	A	IAC-19.B5.1.9
Drescher, Juergen	CA	IAC-19.E6.3.13
Drew, Jamie	CA	IAC-19.A4.1.1
Drew, Jamie	CA	IAC-19.A4.1.3
Drew, Jamie	CA	IAC-19.A4.1.16
Drewczynski, Wojciech	CA	IAC-19.E6.2.3
Dreyer, Christopher	CA	IAC-19.D4.5.12
Driedger, Matthew	A	IAC-19.D5.1.5
Driedger, Matthew	A	IAC-19.E2.4.10
Driedger, Matthew	A	IAC-19.E1.IP.26
Drobny, Jon	A	IAC-19.D4.4.7
Dron', Mykola	CA	IAC-19.D2.5.8
Dron', Mykola	CA	IAC-19.D2.IP.10

Name	Role	Paper
Drozd, Kristofer	CA	IAC-19.C1.8.10
Drudi, Lisa	CA	IAC-19.A6.1.3
Druesedow, Trenton	CA	IAC-19.A5.3-B3.6.8
Du, Hui	A	IAC-19.E3.1.1
Du Plessis, Justin	CA	IAC-19.B4.IP.16
Duan, Kang	A	IAC-19.E7.2.12
Duan, Kang	A	IAC-19.E7.3.14
DUAN, Li	A	IAC-19.A2.2.3
DUAN, Li	CA	IAC-19.A2.3.4
Duan, Min	CA	IAC-19.A6.IP.16
Duarte, José	CA	IAC-19.D1.3.8
Duarte, José	CA	IAC-19.D1.4B.9
Dubanchet, Vincent	CA	IAC-19.C1.5.5
Dubanchet, Vincent	CA	IAC-19.C1.6.5
Dubanchet, Vincent	CA	IAC-19.C1.8.4
Dubois, Frank	CA	IAC-19.A2.2.2
Duchemin, Olivier	A	IAC-19.C4.4.10
Dudal, Clement	CA	IAC-19.A3.4A.6
Dudal, Clement	CA	IAC-19.A3.4B.2
Dudas, Eszter	CA	IAC-19.C4.4.1
Dueck, Andreas	CA	IAC-19.C2.3.8
Duesmann, Berthyl	CA	IAC-19.C1.1.4
Dufrey, Julien	CA	IAC-19.B6.3.11
Duggan, Conor	A	IAC-19.E6.1.12
Duggan, Matthew	A	IAC-19.E5.1A.2
Duggan, Matthew	CA	IAC-19.B3.7.5
Duggleby, Andrew	CA	IAC-19.D2.2.1
Duhan, Nikita	CA	IAC-19.A5.IP.9
Dukeman, Greg	CA	IAC-19.D2.9-D6.2.6
Dumke, Michael	CA	IAC-19.D2.5.3
Dumont, Etienne	CA	IAC-19.C1.1.9
Dumont, Etienne	CA	IAC-19.D2.6.1
Dumont, Etienne	CA	IAC-19.D2.6.2
Dumont, Etienne	CA	IAC-19.B4.8.12
Dumonthier, Jeffrey	CA	IAC-19.B4.9-GTS.5.8
Duncan, Joseph	CA	IAC-19.B2.5.2
Dungavell, Ross	CA	IAC-19.D3.IP.5
Dunn, Steven	A	IAC-19.E1.5.1
Duong, Ryan	A	IAC-19.D1.1.2
DUPONT, CEDRIC	CA	IAC-19.D2.7.11
Dupuis, Erick	CA	IAC-19.A3.1.3
Dupuy, Christian	CA	IAC-19.A6.4.1
Durante, Marco	CA	IAC-19.A1.5.13
Durbin, Liam	CA	IAC-19.D1.4A.3
Durgule, Manali	CA	IAC-19.E2.3-GTS.4.4
Durna, Mehmet	CA	IAC-19.D1.3.6
Durr, Nathanaël	CA	IAC-19.A6.2.1
Durrani, Daniyal Ahmad	CA	IAC-19.A2.1.9
Durrani, Haris	A	IAC-19.E7.IP.17
Durst, Steve	CA	IAC-19.A3.2B.4
Durst, Steve	A	IAC-19.A3.2C.2
Durán, Cintia	A	IAC-19.E5.5.6
DUTHEIL, Jean Philippe	CA	IAC-19.E1.3.10
Dutta, Prachi	A	IAC-19.D1.4A.2
DUVAL, Hervé	A	IAC-19.C2.2.2
Duval, Jean-Marc	CA	IAC-19.A7.3.5
Duvaux-Bechon, Isabelle	A	IAC-19.D4.2.3
Duzzi, Matteo	CA	IAC-19.A6.3.9
Duzzi, Matteo	CA	IAC-19.C4.8-B4.5A.5
Dvoracek, Marek	CA	IAC-19.E3.4.2
Dwyer-Cianciolo, Alicia	CA	IAC-19.A3.3B.13
Dyer, Bob	CA	IAC-19.A6.6.6
Dzamba, Tom	CA	IAC-19.A3.2B.4
Dziura, Martin	CA	IAC-19.D4.3.12
Döbler, Holger	CA	IAC-19.B6.IP.7
Döringshoff, Klaus	CA	IAC-19.A2.3.6
Dügmeci, Volkan	CA	IAC-19.C2.5.7
Dünne, Matthias	A	IAC-19.A1.6.3
Dąbrowski, Adam	A	IAC-19.A2.3.7

E

E, Zhibo	CA	IAC-19.C1.2.12
Eades, Michael	CA	IAC-19.C3.5-C4.7.7
Earle, James	CA	IAC-19.E5.1A.9
Easterson, Joshua	CA	IAC-19.D6.1.2
Ebben, Philip	CA	IAC-19.B3.5.6
Ebert, Sarah	CA	IAC-19.A1.8.4
Ecale, Eric	CA	IAC-19.A3.5.4
Eccles, David	A	IAC-19.E6.4.2
Echaide, Verania	A	IAC-19.E6.1.2
Echsel, Markus	CA	IAC-19.D1.3.5
Ecker, Adrian	CA	IAC-19.A1.1.2
Eckerdal, Filip	CA	IAC-19.E5.1A.6
Eckersley, Steve	CA	IAC-19.D1.6.6
Edeline, Emmanuel	A	IAC-19.C4.1.1
Edmundson, Perry	CA	IAC-19.A3.2B.4
Edmunson, Jennifer	CA	IAC-19.E5.1A.8
Edmunson, Jennifer	CA	IAC-19.D3.2B.5
Edquist, Karl	CA	IAC-19.A3.3B.13
Edwards, Bernard	CA	IAC-19.B2.7.10
Edwards, Betsy	CA	IAC-19.B2.7.3
Eerme, Tõnis	A	IAC-19.E5.2.9
Eggert, Pete	CA	IAC-19.D2.2.2
Egoriti, Roberta	CA	IAC-19.A1.IP.10
Egron, Elise	CA	IAC-19.A7.2.3
Ehlmann, Bethany	CA	IAC-19.A3.5.5
Ehresmann, Manfred	CA	IAC-19.D1.3.5
Ehresmann, Manfred	CA	IAC-19.E1.3.12
Ehresmann, Manfred	A	IAC-19.E2.3-GTS.4.2
Ehresmann, Manfred	A	IAC-19.B4.IP.12
Ehresmann, Manfred	A	IAC-19.D2.IP.5
Ehresmann, Manfred	CA	IAC-19.A2.6.4
Ehrlich, Joshua	CA	IAC-19.A5.1.2
Eichhorn, Helge	CA	IAC-19.A3.2C.10
Eickhoff, Jens	CA	IAC-19.D1.6.5
Eigelsreiter, Gerhard	CA	IAC-19.B2.7.7
Eingorn, Maxim	A	IAC-19.A2.1.8
Eiringhaus, Daniel	CA	IAC-19.D4.3.12
Eismont, Natan	CA	IAC-19.C1.2.9
Eismont, Natan	CA	IAC-19.B3.3.11
Ekblad, Joakim	CA	IAC-19.B5.1.9
Ekblaw, Ariel	A	IAC-19.D4.1.13
Ekblaw, Ariel	A	IAC-19.E5.1A.12
Ekblaw, Ariel	A	IAC-19.B4.3.1
Ekblaw, Ariel	CA	IAC-19.A5.1.10
Ekblaw, Ariel	A	IAC-19.C2.9.7
Ekman, Jonas	CA	IAC-19.E6.1.4
Ekman, Torbjörn	CA	IAC-19.B2.8-GTS.3.7
El Khantouti, Imane	CA	IAC-19.B4.9-GTS.5.15
El Khantouti, Imane	CA	IAC-19.E6.3.2
El Khantouti, Imane	CA	IAC-19.E3.IP.2
El-Araby, Esam	CA	IAC-19.B2.7.11
Elahi, Hassan	CA	IAC-19.C2.9.8
Elaskri, Abdurrazag	CA	IAC-19.D4.1.4
Eldering, Cornelis	CA	IAC-19.E6.1.5
Eldholm, Mari Amanda	CA	IAC-19.E7.3.1
Elisabet, Wejmo	CA	IAC-19.B4.8.12
Elkins-Tanton, Linda	A	IAC-19.D4.3.1
Ellenburg, Lee	CA	IAC-19.B1.6.2
Ellery, Alex	A	IAC-19.D4.1.4
Ellery, Alex	A	IAC-19.A4.1.14
Ellery, Alex	CA	IAC-19.A7.3.4
Ellery, Alex	CA	IAC-19.A1.6.9
Ellery, Alex	CA	IAC-19.A3.5.6
Ellery, Alex	A	IAC-19.A1.7.2
Ellery, Alex	A	IAC-19.C3.4.4
Ellery, Alex	A	IAC-19.D5.4.6
Elliott, Duncan	CA	IAC-19.B4.6B.2
Elliott, John	CA	IAC-19.A3.1.6
Elliott, John	CA	IAC-19.B6.2.9
Elliott, John	CA	IAC-19.C3.2.9
Elliott, John	A	IAC-19.D3.2A.2
Elliott, John	CA	IAC-19.D3.2A.4
Elliott, John	A	IAC-19.A4.IP.2
Ellis, David	CA	IAC-19.C4.3.5
Ellison, Donald	CA	IAC-19.C1.2.11
Elmacioglu, Derya	CA	IAC-19.E6.3.6
Elsen, Michael	A	IAC-19.A2.3.6
Elvis, Martin	A	IAC-19.D4.IP.7

Name	Role	Paper
Elwertowska, Agnieszka	CA	IAC-19.A2.3.7
Emanuelli, Matteo	CA	IAC-19.B4.6B.7
Emeka, Akpevwe	CA	IAC-19.B1.IP.10
Emmert, David	CA	IAC-19.A6.4.7
Emmons, Debra	CA	IAC-19.D1.5.10
Encinas, Jose Maria	CA	IAC-19.A7.3.5
Endler, Stephan	CA	IAC-19.B2.3.3
Endler, Stephan	CA	IAC-19.B2.4.3
Endo, Masato	CA	IAC-19.C1.2.5
Eng, Douglas	CA	IAC-19.D1.4B.4
Engelhardt, Doug	CA	IAC-19.A6.10-B4.10.3
Engelhart, Daniel	A	IAC-19.A6.1.10
Engelund, Walt	CA	IAC-19.A3.2B.2
Englander, Jacob	A	IAC-19.C1.2.11
Engler, Simon	A	IAC-19.A5.2.3
Engler, Simon	A	IAC-19.A1.IP.5
Engler, Simon	CA	IAC-19.C3.4.7
Enoksen, Odd Roger	CA	IAC-19.D2.2.5
Enriquez, J. Emilio	CA	IAC-19.A4.1.1
Enriquez, J. Emilio	CA	IAC-19.A4.1.3
Ercoli Finzi, Amalia	CA	IAC-19.E6.2.4
Erd, Christian	CA	IAC-19.A3.5.4
Erdmann, Tony	A	IAC-19.E1.8.4
Erdos, Boglarka	CA	IAC-19.A1.5.3
Eren, Busra Nimet	CA	IAC-19.C4.2.13
Erickson, Andrew	A	IAC-19.E4.2.5
Erickson, Andrew	A	IAC-19.E4.3.7
Erickson, Kristen	A	IAC-19.E1.8.8
Ermoli, Erika	CA	IAC-19.B6.2.11
Ermoli, Erika	CA	IAC-19.B6.1.10
Ernst, Ruwan	CA	IAC-19.D2.3.2
Escobar Antón, Diego	CA	IAC-19.A6.9.3
Escobedo Casillas, Salvador Daniel	A	IAC-19.B6.IP.8
Esen, Etop	CA	IAC-19.B1.3.6
Eshete, Yilkal	A	IAC-19.B4.IP.30
Esmail, Mahommed Yagoub Ibrahim	CA	IAC-19.B1.5.8
Esmieu-Fournel, Maixent	CA	IAC-19.C4.6.2
Esper, Jaime	A	IAC-19.B4.8.14
Espinoza, Alejandro	CA	IAC-19.E1.2.8
Esposito, Antonio	A	IAC-19.B6.1.3
Esposito, Marco	A	IAC-19.B4.4.4
Esquivel de Cocca, Maria de las Mercedes	A	IAC-19.E7.7.8
Essmyer, Zana	CA	IAC-19.E2.3-GTS.4.6
Estabrook, Polly	CA	IAC-19.B2.7.1
Estanqueiro, Luís	CA	IAC-19.E1.9.13
Esteban-Dones, Jesus	A	IAC-19.B6.1.8
Esty, Charles	A	IAC-19.A5.4-D2.8.6
Etheridge, Timothy	CA	IAC-19.A2.5.3
Eubanks, T. Marshall	CA	IAC-19.D4.1.11
Eubanks, T. Marshall	A	IAC-19.D4.4.5
Eugeni, Marco	CA	IAC-19.C2.5.1
Eugeni, Marco	CA	IAC-19.C2.5.12
Eugeni, Marco	A	IAC-19.C2.9.8
Eustes, Alfred	CA	IAC-19.A3.IP.10
Evagora, Anthony	CA	IAC-19.A3.2C.6
Everetts, Walt	CA	IAC-19.A6.10-B4.10.3
Eversberg, Thomas	CA	IAC-19.A6.IP.3
Ewald, Reinhold	CA	IAC-19.A1.1.9
Ewald, Reinhold	CA	IAC-19.B3.5.8
Ewald, Reinhold	CA	IAC-19.A1.7.3
Ewald, Reinhold	CA	IAC-19.A1.8.5
Eyer, Jesse	CA	IAC-19.A3.2A.4
Ez Zaaf, Jihane	CA	IAC-19.B4.9-GTS.5.15
Ezhilrajan, Elayaperumal	A	IAC-19.C4.3.11
Eznarriaga, Lucas	CA	IAC-19.C2.6.7

F

Fabbri, Valentino	CA	IAC-19.B5.3.4
Faber, Daniel	CA	IAC-19.B3.3.10
Faber, Daniel	CA	IAC-19.A6.6.2
Faber, Marthe	CA	IAC-19.A3.2C.3
Faber, Weston	CA	IAC-19.A6.7.6
Faber, Weston	CA	IAC-19.A6.9.4
Faber, Weston	CA	IAC-19.C1.9.9
Fabrizio, Carrai	CA	IAC-19.D1.1.1
Facchinetti, Claudia	CA	IAC-19.B2.1.3
Facchinetti, Claudia	CA	IAC-19.B2.2.4
Facchinetti, Claudia	CA	IAC-19.B1.2.11
Facchinetti, Claudia	CA	IAC-19.B1.3.2
Facchinetti, Claudia	CA	IAC-19.B2.6.2
Fadairo, Adebayo	CA	IAC-19.B1.IP.10
Faddoul, Antoine	A	IAC-19.D4.4.6
Fader, Laura	CA	IAC-19.A5.IP.4
Fahrion, Jana	CA	IAC-19.A1.7.12
Faizullin, Dmytro	CA	IAC-19.B4.4.8
Fajardo, Isai	A	IAC-19.B4.4.8
Falcke, Heino	CA	IAC-19.B4.2.11
Falcke, Heino	CA	IAC-19.A3.2B.1
Falcone, Federico	CA	IAC-19.A2.6.8
Falconi, Roberto	A	IAC-19.E1.1.2
Falker, Jay	CA	IAC-19.D3.4.1
Falvella, Maria Cristina	CA	IAC-19.D6.3.11
Fan, Liming	A	IAC-19.E2.2.2
Fantinati, Cinzia	CA	IAC-19.A3.4A.6
Fantinati, Cinzia	CA	IAC-19.A3.4B.2
Fantino, Elena	CA	IAC-19.C1.3.8
Fantino, Elena	CA	IAC-19.C1.4.10
Faraci, Marco	A	IAC-19.B1.3.2
Farago, François	CA	IAC-19.C4.5.2
Faraji, Farbod	CA	IAC-19.C4.4.6
Faria, Vítor	CA	IAC-19.D2.IP.16
Farias, Alexandria	CA	IAC-19.D1.1.5
Farid, Ahmed	CA	IAC-19.B4.9-GTS.5.15
Farina, Francesco	CA	IAC-19.E2.1.8
Farina, Francesco	CA	IAC-19.C2.3.1
Farinelli, Ciro	A	IAC-19.E3.1.8
Farissi, Mohamed Salim	A	IAC-19.C1.5.11
Farley, Sean	A	IAC-19.A1.8.4
Farquhar, Irene	A	IAC-19.D5.1.7
Farquhar, Irene	A	IAC-19.B4.7.15
Farr, Alexander	CA	IAC-19.A1.4.15
Farres, Ariadna	A	IAC-19.C1.4.5
Fasano, Giancarmine	CA	IAC-19.B4.7.8
Fasano, Luca	A	IAC-19.B1.2.11
Fasano, Luca	A	IAC-19.B1.IP.9
Fasoulas, Stefanos	CA	IAC-19.C4.5.8
Fasoulas, Stefanos	CA	IAC-19.D1.3.5
Fasoulas, Stefanos	CA	IAC-19.B4.IP.12
Fasoulas, Stefanos	CA	IAC-19.E1.IP.24
Fasoulas, Stefanos	CA	IAC-19.A1.7.3
Fasoulas, Stefanos	CA	IAC-19.A1.8.5
Fast, Kelly	CA	IAC-19.E5.4.4
Fatica, Mirella	A	IAC-19.E3.6.8
Fatoyinbo, Temilola	CA	IAC-19.B1.6.4
Fau, Guillaume	CA	IAC-19.A3.2C.6
Fau, Guillaume	CA	IAC-19.A3.2C.8
Faucher, Pascal	CA	IAC-19.A6.8.1
Fauci, Roberto	CA	IAC-19.D2.5.6
Faulconer, Walter	A	IAC-19.A3.1.4
Faure, Pauline	A	IAC-19.E1.2.11
Fauste, Jorge	CA	IAC-19.D5.3.3
Favarolo, Diego	A	IAC-19.B2.3.5
Favier, Jean-Jacques	CA	IAC-19.A2.6.8
Favors, Jamie	A	IAC-19.B5.3.7
Fedele, Alberto	CA	IAC-19.D1.1.1
Fedele, Alberto	A	IAC-19.D2.6.7
Fedele, Cristina	CA	IAC-19.D1.6.7
Federici, Stefano	CA	IAC-19.B1.2.11
Federico, Giulia	CA	IAC-19.E1.6.12
Feichtinger, Christian	CA	IAC-19.B2.7.13
Feiden, Arno	CA	IAC-19.D5.1.2
Feigel, Andreas	CA	IAC-19.B3.7.2
Feireiss, Lukas	A	IAC-19.E1.9.8
Feist, Jörg	CA	IAC-19.C2.IP.15
Fekete, Sándor	CA	IAC-19.B6.2.2
Felix, Carmen	CA	IAC-19.B3.IP.7
Felix, Carmen	CA	IAC-19.E1.7.12
Fellowes, Simon	CA	IAC-19.A6.5.1

Name	Role	Paper
Fellowes, Simon	CA	IAC-19.A6.6.6
Fellows, Abigail	CA	IAC-19.A1.1.11
Fellows, Abigail	CA	IAC-19.A1.IP.4
Feng, Dan	CA	IAC-19.B1.4.2
Feng, Minjie	CA	IAC-19.C2.9.4
Fenoglio, Franco	CA	IAC-19.A5.1.3
Ferguson, Allison	CA	IAC-19.D5.1.5
Ferguson, Philip	CA	IAC-19.B2.1.4
Ferguson, Philip	CA	IAC-19.D5.1.5
Ferguson, Philip	CA	IAC-19.E2.4.10
Ferguson, Philip	CA	IAC-19.D1.4A.8
Ferguson, Philip	CA	IAC-19.E1.IP.25
Ferguson, Philip	CA	IAC-19.E1.IP.26
Ferguson, Philip	CA	IAC-19.C2.7.3
Ferguson, Philip	CA	IAC-19.B6.1.6
Ferguson, Philip	CA	IAC-19.C2.9.10
Fernandes, George	A	IAC-19.C2.7.10
Fernandez, Alberto	CA	IAC-19.A6.IP.1
Fernandez, Loriane	CA	IAC-19.D2.7.9
Fernandez, Miguel	CA	IAC-19.A7.3.5
Fernandez Capon, Lara	A	IAC-19.B4.6B.3
Fernandez Garcia, Carolina	A	IAC-19.E6.2.6
Fernandez Villace, Victor	CA	IAC-19.D4.1.7
Fernandez-Borda, Roberto	CA	IAC-19.B1.2.7
Fernini, Ilias	CA	IAC-19.A7.2.4
Fernini, Ilias	CA	IAC-19.A3.3A.10
Fernstrom, Tomas	CA	IAC-19.C4.10.2
Fernández-Arruti, Bibiano	CA	IAC-19.B4.IP.4
Ferracina, Luca	CA	IAC-19.D2.6.7
Ferran Marques, Marta	A	IAC-19.C2.IP.15
Ferrant, Remi	CA	IAC-19.A3.2C.8
Ferrari, Gabriele	A	IAC-19.B4.7.5
Ferrario, Lorenzo	CA	IAC-19.B4.5.8
Ferraris, Simona	CA	IAC-19.A3.3A.11
Ferraris, Simona	CA	IAC-19.C4.4.11
Ferraris, Simona	CA	IAC-19.C2.7.2
Ferraris, Simona	CA	IAC-19.A5.4-D2.8.9
Ferraro, Ned	CA	IAC-19.D5.3.9
Ferraro, Ned	CA	IAC-19.D5.3.12
Ferrato, Eugenio	CA	IAC-19.C4.4.6
Ferrazzani, Marco	A	IAC-19.E7.3.5
Ferreira, Alessandra	A	IAC-19.D4.3.17
Ferreira, Maurício Gonçalves Vieira	CA	IAC-19.B6.1.12
Ferreira Perroni da Silva, Glayse	A	IAC-19.E5.4.8
Ferrer Perez, Jorge Alfredo	CA	IAC-19.E1.3.6
Ferretti, Stefano	CA	IAC-19.B5.2.5
Ferri, Paolo	CA	IAC-19.A3.5.2
Ferrie, MacKenzie	CA	IAC-19.B4.2.3
Fesq, Lorraine	CA	IAC-19.B6.3.8
Fetterer, Peter	CA	IAC-19.B2.7.11
Fetzer, Gregory	CA	IAC-19.A6.4.8
Feuerle, Thomas	CA	IAC-19.D6.1.8
Feusier, Gilles	CA	IAC-19.E1.7.4
Fexer, Sebastian	A	IAC-19.B4.3.9
Ficai Veltroni, Iacopo	CA	IAC-19.B1.3.2
Fiedler, Hauke	A	IAC-19.A6.IP.21
Fiedler, Hauke	CA	IAC-19.A6.9.1
Figueiredo, Paulo	CA	IAC-19.C2.IP.13
FIGUS, Christophe	A	IAC-19.D3.2B.4
Filippetto, Daniele	CA	IAC-19.B5.3.4
Filippi, Gianluca	A	IAC-19.D1.4B.7
Filippi, Matteo	CA	IAC-19.C2.3.4
Filleul, Félicien	CA	IAC-19.C4.4.1
Finchenko, Valeri S.	CA	IAC-19.C2.7.6
Findlay, James AP	CA	IAC-19.A3.3A.11
Findlay, James AP	CA	IAC-19.C4.4.11
Findlay, James AP	CA	IAC-19.C2.7.2
Findlay, James AP	CA	IAC-19.A5.4-D2.8.9
Fink, Andreas	CA	IAC-19.A1.1.9
Fink, Carina	CA	IAC-19.A1.7.12
Finn, Timothy	CA	IAC-19.D5.3.3
Finn, Timothy	CA	IAC-19.A7.IP.4
Fiore, Fabrizio	CA	IAC-19.C1.5.4
Fiorini, Davide	CA	IAC-19.B1.3.2
Fiotti, Nicola	CA	IAC-19.A1.3.3

Name	Role	Paper
Fischer, Alexander	CA	IAC-19.D2.5.10
Fischer, Beate	CA	IAC-19.A3.2C.3
FISCHER, NEAL	CA	IAC-19.E1.IP.4
Fischer, Philipp	CA	IAC-19.D1.4B.5
Fish, Sands	A	IAC-19.E1.9.4
Fiske, Michael	CA	IAC-19.E5.1A.8
Fiske, Mike	CA	IAC-19.D3.2B.5
Fitch, Joshua	CA	IAC-19.A5.4-D2.8.6
Fitzgerald, Michael	A	IAC-19.D4.3.2
Fitzgerald, Michael	CA	IAC-19.D4.3.3
Fitzgerald, Michael	CA	IAC-19.D4.3.8
Fitzsimmons, Alan	CA	IAC-19.A3.4B.5
Flecht, Tobias	CA	IAC-19.A3.2A.4
Flegel, Sven Kevin	A	IAC-19.A6.9.8
Fleischer, Jennifer	A	IAC-19.A1.1.11
Flewelling, Brien	A	IAC-19.A6.7.8
Fliege, Jörg	CA	IAC-19.A6.2.6
Flohrer, Tim	CA	IAC-19.A6.9.2
Flores, Africa	CA	IAC-19.B1.6.2
Flores, Angel	CA	IAC-19.B4.6A.12
Flores, Roberto	CA	IAC-19.C1.3.8
Flores, Victor	CA	IAC-19.D2.7.4
Florian, Jacob	A	IAC-19.E2.3-GTS.4.3
Florin, Gunnar	A	IAC-19.A2.5.6
Flynn, Michael T.	CA	IAC-19.A1.7.7
Fodorcan, Daniel	CA	IAC-19.A3.2C.6
Fodorcan, Daniel	CA	IAC-19.A3.2C.8
Fogarty, Jennifer	CA	IAC-19.A1.2.1
Fogarty, Jennifer	CA	IAC-19.A1.4.3
Fogel, Yaniv	CA	IAC-19.D4.IP.9
Foglia Manzillo, Pierluigi	CA	IAC-19.B4.4.4
Fogtman, Anna	CA	IAC-19.B3.2.5
Foing, Bernard	CA	IAC-19.E5.3.10
Foing, Bernard	CA	IAC-19.A3.IP.17
Foing, Bernard	CA	IAC-19.A7.IP.5
Foing, Bernard	CA	IAC-19.E1.IP.34
Foing, Bernard	CA	IAC-19.E5.IP.5
Foing, Bernard	CA	IAC-19.A3.2C.1
Foing, Bernard	CA	IAC-19.A3.2C.9
Fokin, Valeriy	CA	IAC-19.B3.5.4
Folta, David C.	CA	IAC-19.C1.1.10
Folta, David C.	A	IAC-19.C1.4.1
Folta, David C.	CA	IAC-19.B4.8.4
Fomina, Elena	A	IAC-19.A1.2.2
Fong, Terry	CA	IAC-19.A3.1.6
Fongarland, Christophe	CA	IAC-19.C3.5-C4.7.2
Fonseca Prince, André	A	IAC-19.A3.IP.20
Fontanot, Carlos	A	IAC-19.E1.6.6
Force, Melissa Kemper	A	IAC-19.E7.4.5
Ford, Bronte	CA	IAC-19.E1.2.1
Forgan, Duncan	CA	IAC-19.A4.2.4
Formaro, Roberto	CA	IAC-19.B1.3.2
Fornito II, Michael	CA	IAC-19.B3.IP.1
Forrester, Crystal	A	IAC-19.E6.3.11
Forsey-Smerek, Alexandra	CA	IAC-19.A3.3B.10
Forshaw, Jason	CA	IAC-19.A6.5.2
Forshaw, Jason	A	IAC-19.A6.6.9
Forshaw, Jason	CA	IAC-19.A6.IP.1
Forshaw, Jason	CA	IAC-19.B4.IP.14
Forshaw, Jason	CA	IAC-19.E3.4.4
Forshaw, Jason	CA	IAC-19.A6.10-B4.10.8
Forshaw, Jason	CA	IAC-19.A6.8.7
Fortezza, Raimondo	CA	IAC-19.A1.3.3
Fortezza, Raimondo	CA	IAC-19.A2.6.10
Fortini, Fabio	CA	IAC-19.D5.3.10
Fortunato, Antonio	CA	IAC-19.C3.3.2
Forward, Tadg	CA	IAC-19.A1.8.2
Fossati, Enrico	CA	IAC-19.B1.3.2
Fournier, Roxanne	A	IAC-19.E1.IP.23
Fournier, Roxanne	A	IAC-19.A1.8.13
Foust, Rebecca	CA	IAC-19.B6.3.8
Fraas, Lewis	A	IAC-19.C3.1.5
Fraas, Lewis	A	IAC-19.C3.2.4
Fragnito, Francesco	CA	IAC-19.D1.2.6
Frajuca, Carlos	CA	IAC-19.C2.7.10

Name	Role	Paper
Francesca, Costantini	CA	IAC-19.A1.6.6
Francesca, Costantini	CA	IAC-19.A2.7.6
Francesconi, Alessandro	CA	IAC-19.A6.2.2
Francesconi, Alessandro	CA	IAC-19.A6.3.7
Francesconi, Alessandro	A	IAC-19.A6.3.8
Francesconi, Alessandro	CA	IAC-19.A6.3.9
Francesconi, Alessandro	CA	IAC-19.A6.4.2
Francesconi, Alessandro	CA	IAC-19.A6.4.6
Francesconi, Alessandro	CA	IAC-19.C2.5.2
Francesconi, Alessandro	CA	IAC-19.B4.6B.8
Franchi, Loris	CA	IAC-19.D1.1.7
Franchi, Loris	CA	IAC-19.B4.7.5
Franchi, Loris	CA	IAC-19.B6.1.3
Francillout, Laurent	CA	IAC-19.D5.1.4
Francillout, Laurent	CA	IAC-19.A6.8.1
Francis, John	CA	IAC-19.D1.6.1
Francom, Matthew	CA	IAC-19.D1.6.1
Frank, Anja	A	IAC-19.C4.1.3
Franulovic, Jenny	CA	IAC-19.E3.1.3
Franzese, Vittorio	CA	IAC-19.B4.8.3
François, Victor	CA	IAC-19.C4.6.2
Fraser, Eric	CA	IAC-19.A1.8.4
Fraser, Morgan	CA	IAC-19.E1.4.6
Frate, David	CA	IAC-19.A5.4-D2.8.2
Frayling, Alyssa	A	IAC-19.E3.1.12
Frederic, Masson	CA	IAC-19.C4.4.11
Freeland, Steven	CA	IAC-19.E7.2.1
Freeman, Ian	CA	IAC-19.B3.3.2
Freeman, Ian	CA	IAC-19.E1.6.8
Freeman, Ronald	A	IAC-19.D5.1.1
Freeman, Ronald	A	IAC-19.D6.1.10
Freeman, Ronald	A	IAC-19.D2.9-D6.2.7
Freimann, Andreas	A	IAC-19.B2.1.11
Freimann, Andreas	A	IAC-19.B4.3.5
Freimann, Andreas	A	IAC-19.B6.IP.7
Freiwang, Peter	CA	IAC-19.B4.2.14
French, Andrew	CA	IAC-19.A3.4A.7
French, Mike	CA	IAC-19.A6.8.9
Frenkel, Natalie	CA	IAC-19.A3.2A.2
Frese, Walter	A	IAC-19.B4.7.14
Frey, Anja	CA	IAC-19.C4.8-B4.5A.10
Frey, Brianna	CA	IAC-19.E1.4.5
Frey, Stefan	CA	IAC-19.A6.2.2
Freylekhman, Stanislav	CA	IAC-19.E3.1.9
Frezza, Lorenzo	CA	IAC-19.B4.1.9
Frezza, Lorenzo	CA	IAC-19.B2.2.8
Frezza, Lorenzo	CA	IAC-19.E1.3.8
Frezza, Lorenzo	CA	IAC-19.B2.4.8
Frezza, Lorenzo	CA	IAC-19.A6.10-B4.10.2
Fried, Irit	A	IAC-19.E1.2.3
Friedensen, Victoria	CA	IAC-19.E5.4.4
Friedl, Lawrence	CA	IAC-19.D4.2.12
Friedl, Lawrence	A	IAC-19.B1.6.1
Friedl, Lawrence	CA	IAC-19.B1.6.3
Friedl, Michael	A	IAC-19.E7.2.11
Friello, Phyllis	A	IAC-19.E1.7.8
Fries, Dan	CA	IAC-19.D4.5.13
Fries, Dan	CA	IAC-19.B4.8.11
Frischauf, Norbert	A	IAC-19.B4.3.7
Frischauf, Norbert	A	IAC-19.A1.4.15
Fritsch, Dieter	CA	IAC-19.E1.3.12
Fritsch, Dieter	CA	IAC-19.E1.IP.33
Fritsch, Dieter	CA	IAC-19.B2.6.3
Fritzler, Adam	CA	IAC-19.C2.6.7
Froehlich, LL.M., MAS, Annette	A	IAC-19.B4.1.2
Froehlich, LL.M., MAS, Annette	A	IAC-19.D4.2.1
Froehlich, LL.M., MAS, Annette	A	IAC-19.E3.1.4
Froehlich, LL.M., MAS, Annette	A	IAC-19.E5.2.6
Froehlich, LL.M., MAS, Annette	A	IAC-19.E1.9.15
Frolov, Kirill	CA	IAC-19.C4.6.7
Frost, Eleonor	A	IAC-19.A1.3.7
Frost, Eleonor	A	IAC-19.E2.2.6
Fröhlich, Florian A.	CA	IAC-19.A3.4B.4
Fu, Danying	CA	IAC-19.A6.6.5
Fu, Lili	CA	IAC-19.C4.9.10
Fu, Wentao	CA	IAC-19.A7.2.2
Fu, Xiaodong	A	IAC-19.D1.IP.7
Fuchs, Christian	CA	IAC-19.B3.3.12
Fuchs, Christian	CA	IAC-19.B4.3.2
Fugett, Daniel	CA	IAC-19.D5.3.9
Fuglesang, Christer	CA	IAC-19.B5.1.9
Fugmann, Martin	CA	IAC-19.D1.3.5
Fugmann, Martin	CA	IAC-19.B4.IP.12
Fujii, Kozo	CA	IAC-19.E1.3.7
Fujii, Tatsuya	CA	IAC-19.D4.3.10
Fujikawa, Takahiro	A	IAC-19.D2.4.9
Fujimoto, Kohei	CA	IAC-19.A6.5.2
Fujimoto, Kohei	CA	IAC-19.B4.IP.14
Fujimoto, Tomoya	CA	IAC-19.D2.1.9
Fujita, Sho	CA	IAC-19.A6.5.2
Fukazawa, Takeyuki	A	IAC-19.D4.3.18
Fukushima, Kodai	CA	IAC-19.E1.6.10
Fulford, Paul	CA	IAC-19.A5.3-B3.6.3
Fuller, Michael	CA	IAC-19.D2.1.3
Fulmer, Dean	CA	IAC-19.D6.1.6
Fulton, JoAnna	A	IAC-19.C1.5.8
Funaki, Ikkoh	CA	IAC-19.A3.3A.11
Funaki, Ikkoh	CA	IAC-19.C4.4.11
Funaki, Ikkoh	CA	IAC-19.A5.4-D2.8.9
Funase, Ryu	CA	IAC-19.D1.4A.1
Fune, Federico	CA	IAC-19.C2.9.8
Funke, Oliver	CA	IAC-19.D1.4A.6
Funke, Quirin	CA	IAC-19.A6.4.9
Furbush, Noah	CA	IAC-19.A1.3.17
Furfaro, Roberto	A	IAC-19.C1.8.10
Furfaro, Roberto	CA	IAC-19.C1.9.12
FURUKAWA, Satoshi	CA	IAC-19.A1.IP.2
Furuya, Hiroshi	CA	IAC-19.C2.2.8
Furuya, Hiroshi	CA	IAC-19.B4.6B.14
Furuya, Hiroshi	CA	IAC-19.C2.9.1
Fusaro, Roberta	CA	IAC-19.D4.1.7
Fusaro, Roberta	CA	IAC-19.D6.3.4
Fuse, Tetsuharu	CA	IAC-19.B2.2.2
Fusté, Oriol	CA	IAC-19.B1.2.10
Futae, Shuhei	CA	IAC-19.C2.1.5
Förstner, Roger	CA	IAC-19.C1.1.12
Förstner, Roger	CA	IAC-19.D1.4A.6

G

G, Levin	CA	IAC-19.C2.1.12
G, Levin	CA	IAC-19.C4.5.4
G, Levin	CA	IAC-19.C4.2.3
G, Levin	CA	IAC-19.C4.2.4
Gabetti, Stefano	CA	IAC-19.A2.6.8
Gable, David	CA	IAC-19.E2.3-GTS.4.6
Gagliardi, Marina	A	IAC-19.E7.IP.6
Gagnon, Eric	CA	IAC-19.A3.2B.4
Gagnon, Robert	CA	IAC-19.A5.4-D2.8.4
Gai, Igor	CA	IAC-19.B4.8.8
Gaikov, Georgii	A	IAC-19.B4.2.5
Gaikov, Georgii	CA	IAC-19.E2.1.7
Gaißer, Steffen	CA	IAC-19.B4.3.2
Gajc, Kamil	CA	IAC-19.C2.IP.21
Gajjar, Vishal	CA	IAC-19.A4.1.1
Gajjar, Vishal	A	IAC-19.A4.1.3
Galambos, Máté	A	IAC-19.B2.8-GTS.3.6
Galante, Joseph	A	IAC-19.C1.6.2
Galarreta, Daniel	A	IAC-19.D5.2.3
Galeotta, Marco	CA	IAC-19.C4.5.2
Galera, Stéphane	CA	IAC-19.A6.4.10
Galfetti, Luciano	CA	IAC-19.C4.2.5
Galfetti, Luciano	CA	IAC-19.C4.2.11
Galhego Rosa, Ana Cristina	A	IAC-19.E7.IP.9
Galica, Carol	A	IAC-19.E1.5.3
Galindo Jr, Charles	CA	IAC-19.B4.6A.7
Galla, Antony	CA	IAC-19.A6.4.8
Galla, Daniel	CA	IAC-19.D1.3.5
Galla, Daniel	CA	IAC-19.B4.IP.12
Galla, Daniel	A	IAC-19.E1.IP.24

Name	Role	Paper
Gallagher, Frank	CA	IAC-19.B1.1.3
Gallagher, Frank	CA	IAC-19.B1.2.1
Gallego, Paloma	CA	IAC-19.A3.3B.11
Galloway, Paul	A	IAC-19.A2.5.9
Gamal, Hamed	A	IAC-19.A2.3.10
Gamal, Hamed	A	IAC-19.E1.7.10
Gamal, Hamed	A	IAC-19.D6.3.2
Gamper, Eduard	A	IAC-19.D6.1.8
Gan, Qingbo	A	IAC-19.A6.IP.19
Ganani, Chaggai	A	IAC-19.C4.8-B4.5A.4
Ganapathi, Gani	CA	IAC-19.C4.4.2
Gancet, Jeremi	A	IAC-19.A3.2C.6
Gancet, Jeremi	CA	IAC-19.A3.2C.8
Gandhi, Deepana	CA	IAC-19.C1.7.10
Ganesan, Siva kumar	A	IAC-19.C2.1.12
Ganesan, Siva kumar	CA	IAC-19.C4.2.3
Gang, Li	A	IAC-19.D2.4.7
Gao, Shibo	CA	IAC-19.B1.IP.2
Gao, Yang	A	IAC-19.A3.2B.6
Gao, Yang	CA	IAC-19.C2.3.11
Gao, Yue	CA	IAC-19.A6.4.8
Gao, Zhao-Yang	A	IAC-19.B2.6.9
Gao, Zhigang	CA	IAC-19.B2.4.11
Garbayo, Alberto	A	IAC-19.C4.8-B4.5A.10
Garbi, Giuliani	CA	IAC-19.D1.3.8
Garbi, Giuliani	CA	IAC-19.D1.4B.9
Garcia, Almudena	CA	IAC-19.A7.3.5
Garcia, Enrique	CA	IAC-19.B4.6A.7
Garcia, Reuben	CA	IAC-19.A3.2A.7
Garcia Gutierrez, Francisco de Borja	CA	IAC-19.A3.4A.9
Garcia Hemme, Hugo	CA	IAC-19.D2.3.2
Garcia Hemme, Hugo	CA	IAC-19.A6.10-B4.10.6
Garcia-Almiñana, Daniel	CA	IAC-19.A2.1.10
Garcia-Almiñana, Daniel	CA	IAC-19.C1.1.3
Garcia-Almiñana, Daniel	CA	IAC-19.B4.6A.2
Garcia-Almiñana, Daniel	CA	IAC-19.C2.6.1
Garcia-Suarez, David	CA	IAC-19.B2.3.5
Garcìa, Maria de la Luz	CA	IAC-19.B4.6A.7
García Garrido, Javier	CA	IAC-19.B2.3.3
García Marirrodriga, César	CA	IAC-19.A3.5.3
García Monclús, Silvia	CA	IAC-19.A2.3.5
García-de-Quirós, Francisco	CA	IAC-19.C3.3.5
García-Salcedo, Antonio J	CA	IAC-19.A2.2.7
García-Salcedo, Antonio J	CA	IAC-19.A2.4.6
Gardi, Roberto	CA	IAC-19.D1.1.1
Gardi, Roberto	CA	IAC-19.D2.5.6
Gardi, Roberto	CA	IAC-19.D2.6.7
Gardner, Brent	A	IAC-19.C3.3.7
Garg, Kunal	CA	IAC-19.C4.6.6
Gargeswari Seshasayee, Ananth	A	IAC-19.C3.3.12
Garhammer, Andreas	CA	IAC-19.B3.7.2
Garmier, Romain	CA	IAC-19.C1.7.3
Garner, Julia	CA	IAC-19.A1.3.17
Garner, Robert	CA	IAC-19.D6.3.7
Garofalo, Riccardo	CA	IAC-19.E1.3.8
Garofalo, Riccardo	CA	IAC-19.B2.4.7
Garrabos, Yves	CA	IAC-19.A2.2.5
Garretson, Peter	CA	IAC-19.E1.4.5
Garrett, John	CA	IAC-19.B1.4.7
Garrett, Mike	CA	IAC-19.A4.1.1
Garrett, Mike	A	IAC-19.A4.1.6
Garrone, Francesco	CA	IAC-19.A2.2.7
Garrone, Francesco	CA	IAC-19.A2.4.6
Gartner, Maximilian	CA	IAC-19.E7.2.11
Garzaniti, Nicola	CA	IAC-19.D1.5.6
Garzón Cardozo, Viviana	A	IAC-19.E1.IP.3
Gasbarri, Paolo	CA	IAC-19.C2.2.5
Gasbarri, Paolo	CA	IAC-19.C2.3.6
Gasbarri, Paolo	CA	IAC-19.D2.7.12
Gaslac, Daniel	CA	IAC-19.C1.IP.19
Gass, Volker	CA	IAC-19.E5.1A.5
Gass, Volker	CA	IAC-19.D5.1.8
Gass, Volker	CA	IAC-19.E1.7.4
Gaston, Robert	CA	IAC-19.B4.3.12
Gataulina, Adelina	CA	IAC-19.C4.6.7

Name	Role	Paper
Gatens, Robyn	CA	IAC-19.B3.7.1
Gates, Michele	A	IAC-19.B3.1.7
Gath, Peter	A	IAC-19.D4.4.3
Gatsonis, Achilles	CA	IAC-19.A2.4.8
Gatsonis, Nikolaos	A	IAC-19.A2.4.9
Gatti Guimarães, Sarah	CA	IAC-19.D1.5.7
Gaudenzi, Paolo	CA	IAC-19.C2.5.1
Gaudenzi, Paolo	CA	IAC-19.C2.5.12
Gaudenzi, Paolo	CA	IAC-19.C2.9.8
Gaudet, Brian	CA	IAC-19.C1.9.12
Gautam, Sabin	A	IAC-19.E5.IP.8
Gauthier, Charles-Frédérick	A	IAC-19.E1.IP.21
Gautier, Florian	A	IAC-19.A2.1.9
GAUTRONNEAU, ERIC	A	IAC-19.C4.2.2
Gauvrit-Ledogar, Julie	CA	IAC-19.D2.7.11
Gawin, Maksymilian	CA	IAC-19.B4.9-GTS.5.5
Gawin, Maksymilian	CA	IAC-19.C2.IP.21
Gayen, Sneha	CA	IAC-19.D5.IP.4
Gaylin, Samuel	CA	IAC-19.C2.1.1
Gaylin, Samuel	CA	IAC-19.D4.1.12
Gaylin, Samuel	A	IAC-19.C4.10.4
Gaynullin, Dmitry	CA	IAC-19.C4.6.2
Gaza, Ramona	CA	IAC-19.A1.5.5
Gaza, Razvan	CA	IAC-19.A1.5.5
Gebremichael, Esayas	CA	IAC-19.E5.4.11
Geetha, G	CA	IAC-19.B1.IP.14
Gehly, Steve	CA	IAC-19.A6.10-B4.10.6
Geldzahler, Barry	CA	IAC-19.B2.7.12
Geller-McGrath, David	CA	IAC-19.E2.3-GTS.4.5
Genaro, Andreia F. S.	A	IAC-19.D5.1.6
Gendreau, Keith	CA	IAC-19.B3.4-B6.4.2
Geng, Fan	A	IAC-19.E3.3.2
Geng, Shengnan	A	IAC-19.C2.9.4
Genockey, Anne	CA	IAC-19.E1.1.7
Genoni, Michele	CA	IAC-19.A2.6.8
Gensch, Michael	CA	IAC-19.A3.4B.9
Gentile, Lorenzo	A	IAC-19.B4.IP.20
George, Maeda	CA	IAC-19.B4.1.20
Georges, Pierre	CA	IAC-19.E6.4.11
Georges, Robert	CA	IAC-19.C4.4.1
Geppert, Wolf-Dietrich	CA	IAC-19.B4.8.7
Gerecs, András	CA	IAC-19.A1.5.3
Gerndt, Andreas	CA	IAC-19.D5.1.10
Gerngross, Tobias	CA	IAC-19.C2.7.11
Gernhardt, Michael	A	IAC-19.A5.IP.6
Gers, Luke	CA	IAC-19.A6.4.8
Gerth, Ingo	A	IAC-19.D1.2.1
Gessini, Paolo	CA	IAC-19.B4.IP.28
Ghafoor, Nadeem	A	IAC-19.A3.2B.4
Ghassabian Gilan, Hady	A	IAC-19.B3.7.12
Ghatora, Karan	CA	IAC-19.A1.3.10
Ghatora, Karan	A	IAC-19.A1.4.1
Ghatora, Karan	CA	IAC-19.A1.4.8
Ghazanfarinia, Sajjad	CA	IAC-19.C3.2.6
Ghazanfarinia, Sajjad	A	IAC-19.E2.4.11
Ghazanfarinia, Sajjad	A	IAC-19.E1.8.2
Ghazanfarinia, Sajjad	A	IAC-19.E6.5-GTS.1.3
GHEDJATTI, ILYES	A	IAC-19.C4.6.1
Ghidini, Tommaso	CA	IAC-19.C2.5.6
Ghirnikar, Suyash	CA	IAC-19.C4.1.13
Ghosh, Alexander	CA	IAC-19.C1.5.2
Ghosh, Alexander	CA	IAC-19.C1.IP.4
Ghosh, Avishek	A	IAC-19.C2.5.10
Ghosh, Avishek	CA	IAC-19.B3.IP.5
Ghosh, Avishek	A	IAC-19.A1.8.6
Giacomuzzo, Cinzia	CA	IAC-19.A6.2.2
Giacomuzzo, Cinzia	CA	IAC-19.A6.3.7
Giacomuzzo, Cinzia	CA	IAC-19.A6.3.8
Giacomuzzo, Cinzia	CA	IAC-19.A6.3.9
Giambusso, Matthew	CA	IAC-19.C4.4.13
Gianfermo, Andrea	A	IAC-19.B2.2.8
Gianfermo, Andrea	CA	IAC-19.E1.3.8
Gianfermo, Andrea	CA	IAC-19.B2.4.7
Gianfermo, Andrea	CA	IAC-19.A6.10-B4.10.2
Giannetti, Vittorio	CA	IAC-19.C4.4.6

Name	Role	Paper
Giannopapa, Christina	CA	IAC-19.D4.2.9
Giannopapa, Christina	CA	IAC-19.D5.2.9
Giannopapa, Christina	A	IAC-19.E6.2.5
Giannopapa, Christina	CA	IAC-19.E7.4.9
Giannopapa, Christina	CA	IAC-19.E6.3.6
Giannopapa, Christina	CA	IAC-19.E6.3.7
Giannopapa, Christina	CA	IAC-19.E7.IP.14
Giannopapa, Christina	CA	IAC-19.D5.4.7
Giaretta, David	CA	IAC-19.B1.4.7
Gibbs, Kristina	CA	IAC-19.A3.2B.10
Gifford, Christopher	CA	IAC-19.B6.IP.4
Giggenbach, Dirk	CA	IAC-19.B4.3.2
Gil Fernandez, Jesus	CA	IAC-19.A3.4A.9
Gil Fernandez, Jesus	CA	IAC-19.C1.7.12
Gilbert, James	A	IAC-19.A7.3.10
Giles, Clinton Randy	A	IAC-19.A2.2.1
Gill, Tracy	CA	IAC-19.B3.7.3
Gillham Darnley, Richard	CA	IAC-19.C2.3.11
Gilliland, Kevin	CA	IAC-19.A3.3A.9
Gioia, Marina	CA	IAC-19.B2.4.2
Giorgini, Diana	CA	IAC-19.E6.2.8
Giraudo, Martina	CA	IAC-19.A1.5.13
Girou, David	CA	IAC-19.E5.IP.10
Gittleman, Mark	A	IAC-19.B3.3.7
Giuliani, Marco	CA	IAC-19.A5.1.9
Giuliani, Marco	CA	IAC-19.D4.5.5
Giuliani, Valerio	A	IAC-19.C3.IP.5
Giulianotti, Marc	A	IAC-19.A2.7.3
Giulianotti, Marc	A	IAC-19.A2.7.5
Giuliatti Winter, Silvia Maria	A	IAC-19.C1.IP.19
Giunti, Lorenzo	CA	IAC-19.B1.3.2
Giustini, Elisabetta	CA	IAC-19.E2.4.6
Gjesvold, Evan	A	IAC-19.A6.6.8
Gkolias, Ioannis	CA	IAC-19.C1.3.1
Gkolias, Ioannis	CA	IAC-19.A6.4.6
Gkolias, Ioannis	CA	IAC-19.A6.6.4
Gkolias, Ioannis	CA	IAC-19.E7.7.4
GLASSMEIER, Karl Heinz	CA	IAC-19.A3.4A.6
GLASSMEIER, Karl Heinz	CA	IAC-19.A3.4B.2
Glassner, Samantha	CA	IAC-19.A5.3-B3.6.6
Gloder, Alessia	CA	IAC-19.C4.8-B4.5A.5
Gloster, Andrew	CA	IAC-19.C1.IP.16
Glukhova, Elizaveta	CA	IAC-19.E5.3.10
Gnat, Marcin	A	IAC-19.B6.1.2
Goczkowski, Jacek	CA	IAC-19.A2.3.7
Godard, Thomas	CA	IAC-19.D5.3.3
Goel, Konark	A	IAC-19.C2.6.11
GOGDET, Olivier	CA	IAC-19.D2.4.1
Gogu, Dragos	CA	IAC-19.A3.3B.8
Goh, Cher-Hiang	CA	IAC-19.B1.4.2
Gokhman, Ilya	CA	IAC-19.A1.1.6
Goldberg, Hannah	CA	IAC-19.A3.4B.6
Goldberg, Mitchell	A	IAC-19.B1.IP.1
Goldoust, F	CA	IAC-19.D1.1.4
Golkar, Alessandro	CA	IAC-19.D1.4A.9
Golkar, Alessandro	A	IAC-19.D1.5.6
Gomes, Luis	CA	IAC-19.B1.1.10
Gomes, Luis	CA	IAC-19.B4.4.1
Gomes, Luis	CA	IAC-19.B4.7.1
Gomez, David	CA	IAC-19.E3.3.2
Gomez, Gerard	CA	IAC-19.C1.4.5
Gomez Fernandez, Irving Enrique	A	IAC-19.D2.7.4
Gomez-Elvira, Javier	A	IAC-19.A7.3.5
Goncharova, Anna	CA	IAC-19.A2.7.10
Gong, Longqing	CA	IAC-19.B2.IP.6
Gong, Zizheng	A	IAC-19.A6.3.2
Gong, Zizheng	CA	IAC-19.A6.3.5
Gong, Zizheng	CA	IAC-19.A6.3.6
Gong, Zizheng	A	IAC-19.A6.6.5
Gong, Zizheng	A	IAC-19.A6.IP.4
Gong, Zizheng	A	IAC-19.A6.IP.5
Gonin, Charles	A	IAC-19.A6.5.9
Gontier, Camille	A	IAC-19.A2.5.4
Gonzales Vallejos, Michael Carlos	CA	IAC-19.E1.IP.18
Gonzalez, Francois	A	IAC-19.A7.1.3

Name	Role	Paper
Gonzalez, Magdalena	CA	IAC-19.E1.IP.18
Gonzalez, Melba	CA	IAC-19.E1.2.8
Gonzalez, Oscar Matias	A	IAC-19.E1.2.8
Gonzalez, Raimundo	CA	IAC-19.E1.IP.18
Gonzalez, Steven	CA	IAC-19.E6.4.9
Gonzalez, Yvette Marie	A	IAC-19.B3.IP.7
Gonzalez, Yvette Marie	A	IAC-19.E1.IP.32
Gonzalez, Yvette Marie	A	IAC-19.E1.7.12
Gonzalez-Arjona, David	CA	IAC-19.A3.3B.8
Gonzalez-Franquesa, Ferran	CA	IAC-19.C1.2.5
Gonzalez-Navarro, Yesenia Eleonor	CA	IAC-19.C2.8.6
Gonzalo, Juan Luis	A	IAC-19.A6.2.3
Gonzalo, Juan Luis	CA	IAC-19.A6.4.2
González-Muiño, Alberto	CA	IAC-19.B5.2.6
González-Muiño, Alberto	CA	IAC-19.B4.IP.4
Gonçalves, André	A	IAC-19.C2.9.3
Gonçalves, Rene	A	IAC-19.E1.IP.8
Goodchild, Melanie	CA	IAC-19.E1.IP.31
Goodenough, Grady	CA	IAC-19.D2.7.10
Gooding, David	CA	IAC-19.C2.2.6
Goodliff, Kandyce	CA	IAC-19.B3.7.1
Goodman, Ben	CA	IAC-19.A1.2.1
Goodman, John	A	IAC-19.D5.2.1
Goodman, John	A	IAC-19.E4.3.3
Goodman, Michael	CA	IAC-19.E5.4.11
Goodson, Troy	CA	IAC-19.A3.5.1
Gopal, Chaitanya	CA	IAC-19.A3.2A.4
Goradia, Varun	CA	IAC-19.C3.IP.6
Gorinov, Dmitry	CA	IAC-19.C1.2.9
Gorulya, Nickolay	CA	IAC-19.C2.4.8
Goryunova, Victoria	CA	IAC-19.C4.6.7
Goss, Rosalin	A	IAC-19.A1.5.7
Gottschalk, Colby	CA	IAC-19.A3.IP.10
Gottschalk, Nicole	CA	IAC-19.D1.3.5
Gotzig, Ulrich	A	IAC-19.C4.1.10
Gotzig, Ulrich	CA	IAC-19.C4.5.8
Gotzig, Ulrich	A	IAC-19.C4.4.8
Goulet-Tran, Didier	A	IAC-19.B2.IP.2
Gourcerol, Etienne	CA	IAC-19.C4.6.2
Gouvêa, Leonardo	CA	IAC-19.E1.IP.8
Govender, Kevindran	CA	IAC-19.E1.2.5
Governale, Giuseppe	A	IAC-19.D4.1.7
Govindaraj, Shashank	CA	IAC-19.A3.2C.6
Govindaraj, Shashank	CA	IAC-19.A3.2C.8
Gowda, Suresh	CA	IAC-19.A1.8.1
Goyal, Tushar	CA	IAC-19.B4.9-GTS.5.10
Gozzelino, Michele	CA	IAC-19.B2.4.2
Gp, Shreya	CA	IAC-19.B2.5.10
Grabe, Martin	A	IAC-19.D5.3.11
Grabowski, Damian	CA	IAC-19.A3.IP.16
Gradl, Paul	A	IAC-19.C4.3.4
Gradl, Paul	A	IAC-19.C4.3.5
Gradl, Paul	CA	IAC-19.C2.4.9
Grajeda, Genaro	A	IAC-19.D3.IP.1
Gramiccia, Luciano	CA	IAC-19.D2.6.7
Granados-Rojas, Benito	A	IAC-19.C2.8.6
Granatstein, Andrew	CA	IAC-19.E6.1.14
Grand-Maison, William	CA	IAC-19.E5.IP.10
Grande, Jøran	CA	IAC-19.E1.3.2
Grande, Jøran	CA	IAC-19.E1.8.3
Grande, Melanie	CA	IAC-19.D1.4A.3
Granena, David	CA	IAC-19.A3.4B.2
Granjon, Richard	CA	IAC-19.C4.4.11
Grant, Helen	CA	IAC-19.A3.1.1
Graß, Markus	CA	IAC-19.B4.3.2
Grassi, Michele	CA	IAC-19.B4.7.8
Grasso, Marco	CA	IAC-19.B4.7.8
Grattan, Kyran	A	IAC-19.E7.IP.4
Grau, Roland	CA	IAC-19.A3.2A.2
Grau, Roland	CA	IAC-19.A3.2A.11
Grau, Sebastian	CA	IAC-19.E2.3-GTS.4.8
Grau, Sebastian	A	IAC-19.C1.5.7
Gravereaux, Alexandra	A	IAC-19.A6.IP.1
Gray, Andrew	CA	IAC-19.A6.4.8
Graziani, Filippo	CA	IAC-19.C4.8-B4.5A.5

Name	Role	Paper
Graziano, Maria Daniela	CA	IAC-19.B4.7.8
Graziano, Mariella	CA	IAC-19.A6.10-B4.10.9
Greaves, Benjamin	CA	IAC-19.A1.3.17
Grebenstein, Markus	CA	IAC-19.A3.4B.8
Greco, Cristian	CA	IAC-19.B4.IP.20
Green, David	CA	IAC-19.B3.2.5
Green, Simon	CA	IAC-19.A3.4B.5
Green, Thomas	A	IAC-19.E7.4.4
Greenblatt, Jeffery	A	IAC-19.A5.2.10
Gregory, John	CA	IAC-19.B4.6B.9
Greig, Amelia	A	IAC-19.D5.3.6
Greig, Amelia	CA	IAC-19.C4.8-B4.5A.7
Grewal, Simranjit	A	IAC-19.C2.IP.1
Grey, Kent	CA	IAC-19.E7.4.4
Griffin, Brand	CA	IAC-19.C2.1.1
Griffin, Brand	A	IAC-19.D4.1.12
Griffin, Brand	CA	IAC-19.A5.3-B3.6.5
Griffin, Eleanor	A	IAC-19.A5.2.11
Griffin, Robert	CA	IAC-19.B1.6.2
Grillmair, Carl J.	CA	IAC-19.A6.1.4
Grillmayer, Lukas	A	IAC-19.B6.1.11
Grimaldi, Gabriel	CA	IAC-19.E2.4.6
Grimaud, Lou	A	IAC-19.C4.8-B4.5A.13
Grimm, Christian	CA	IAC-19.A3.IP.22
Grimm, Christian	CA	IAC-19.B4.8.12
Grimsley, Reagan	A	IAC-19.E5.5.7
Grishko, Dmitriy	CA	IAC-19.C1.1.6
Grishko, Dmitriy	CA	IAC-19.E1.2.10
Grishko, Dmitriy	CA	IAC-19.A6.5.6
Grishko, Dmitriy	A	IAC-19.C1.IP.3
Grocott, Simon	CA	IAC-19.B4.4.7
Gromyko, Antonina	A	IAC-19.E1.7.9
Gross Muñoz, Eduardo Joaquin	CA	IAC-19.B4.1.13
Grosse, Doris	CA	IAC-19.A6.4.8
Grosse, Jens	CA	IAC-19.A2.3.6
Großhans, Jens	CA	IAC-19.D5.1.3
Großhans, Jens	CA	IAC-19.B2.3.10
Großhans, Jens	CA	IAC-19.C1.6.7
Großhans, Jens	CA	IAC-19.D1.4B.8
Großhans, Jens	A	IAC-19.B2.7.9
Grossi, Armando	CA	IAC-19.B4.1.9
Grossir, Guillaume	CA	IAC-19.A6.4.10
Grott, Matthias	CA	IAC-19.A3.4A.6
Grott, Matthias	CA	IAC-19.A3.4B.2
Grott, Matthias	CA	IAC-19.A3.4B.8
Gruber, Jennifer	CA	IAC-19.B3.1.9
Grundle, Damian	CA	IAC-19.A1.6.13
Grundmann, Jan Thimo	CA	IAC-19.A3.3A.11
Grundmann, Jan Thimo	CA	IAC-19.C4.4.11
Grundmann, Jan Thimo	CA	IAC-19.A3.4A.6
Grundmann, Jan Thimo	CA	IAC-19.E3.IP.4
Grundmann, Jan Thimo	CA	IAC-19.C2.7.2
Grundmann, Jan Thimo	CA	IAC-19.A5.4-D2.8.9
Grundmann, Jan Thimo	A	IAC-19.B4.8.12
Grundmann, Jan Thimo	CA	IAC-19.A3.4B.2
Grundmann, Jan Thimo	CA	IAC-19.A3.4B.3
Grundmann, Jan Thimo	CA	IAC-19.A3.4B.8
Gruntman, Mike	CA	IAC-19.B4.2.2
Gruntman, Mike	CA	IAC-19.D4.4.1
Grunwald, Gerhard	CA	IAC-19.C2.7.2
Grunwald, Kira	CA	IAC-19.E2.3-GTS.4.2
Grunwald, Kira	A	IAC-19.A2.6.4
Grunwald, Warren	CA	IAC-19.C1.1.7
Grzesik, Benjamin	CA	IAC-19.B6.2.2
Grès, Stéphane	A	IAC-19.D1.1.3
Grünefeld, Matthias	CA	IAC-19.B4.2.14
Gschweitl, Michael	CA	IAC-19.C2.5.12
Guachi, Roberto	CA	IAC-19.E1.IP.18
Gualtieri, Alejandro	A	IAC-19.D4.IP.13
Guan, Gongshun	A	IAC-19.A6.IP.16
Guan, Yue	CA	IAC-19.E3.3.2
Guardabasso, Paolo	A	IAC-19.A5.2.9
Guardabasso, Paolo	A	IAC-19.D1.IP.5
Guardabasso, Paolo	A	IAC-19.B6.3.7
Guariniello, Cesare	A	IAC-19.D1.4A.3
GUARIRAPA, Maria	CA	IAC-19.B4.4.10
Gubbini, Elena	CA	IAC-19.B3.3.8
Guerman, Anna	CA	IAC-19.D4.3.16
Guerra, André	CA	IAC-19.C2.IP.13
Guerra, André	CA	IAC-19.C2.9.3
Guerra, Luca	CA	IAC-19.D1.1.7
Guerra-Rivera, Jesus A.	CA	IAC-19.A1.3.10
Guerra-Rivera, Jesus A.	CA	IAC-19.A1.4.8
Guest, James	CA	IAC-19.C2.5.3
Guest, James	CA	IAC-19.C2.8.11
Guglieri, Giorgio	CA	IAC-19.B4.6A.6
Guglin, Jacob	A	IAC-19.A5.1.10
Guidi, John	CA	IAC-19.E1.5.3
Guimaraes, Lamartine Nogueira Frutuoso	CA	IAC-19.A3.3A.11
Guimaraes, Lamartine Nogueira Frutuoso	CA	IAC-19.C4.4.11
Guimaraes, Lamartine Nogueira Frutuoso	CA	IAC-19.C2.7.2
Guimaraes, Lamartine Nogueira Frutuoso	CA	IAC-19.A5.4-D2.8.9
Gula, Noah	A	IAC-19.D2.5.4
Gulde, Max	CA	IAC-19.B4.4.6
Gulliver, Brian	CA	IAC-19.D2.2.2
Gunga, Hanns-Christian	CA	IAC-19.A1.1.1
Gunga, Hanns-Christian	CA	IAC-19.A1.1.2
Gunga, Hanns-Christian	CA	IAC-19.A1.4.14
Guo, Jian	CA	IAC-19.B4.6A.4
Guo, Jian	CA	IAC-19.C1.8.6
Guo, Yanping	A	IAC-19.A3.5.1
Gupta, Aman	CA	IAC-19.E2.3-GTS.4.4
Gupta, Mini	CA	IAC-19.A6.9.5
Gupta, Pranika	CA	IAC-19.A1.3.17
Gupta, Pranika	CA	IAC-19.E2.3-GTS.4.1
Gupta, Shantanu	CA	IAC-19.B2.7.11
Gupta, Shobhana	CA	IAC-19.D4.2.11
Gupta, Tanish	CA	IAC-19.C4.5.5
Gur, Ruben	CA	IAC-19.A1.1.2
Gurumurthy, Sundar	CA	IAC-19.C2.2.10
Gushin, Vadim	CA	IAC-19.A1.1.4
Gushin, Vadim	CA	IAC-19.A1.1.12
Gut, Zbigniew	CA	IAC-19.C4.3.13
Gutiérrez Barboza, Maricruz	CA	IAC-19.E1.3.4
Gutiérrez Barboza, Maricruz	CA	IAC-19.E1.5.9
Guven, Ugur	CA	IAC-19.D4.1.10
Guven, Ugur	CA	IAC-19.D4.1.14
Guven, Ugur	A	IAC-19.A4.2.13
Guven, Ugur	CA	IAC-19.C4.6.6
Guven, Ugur	CA	IAC-19.C4.6.9
Guven, Ugur	CA	IAC-19.C2.6.10
Guven, Ugur	A	IAC-19.D6.3.3
Guy, Nathaniel	A	IAC-19.B4.IP.14
Guyon, Vincent	CA	IAC-19.C4.4.10
Guzzetti, Davide	A	IAC-19.C1.4.11
Guédron, Sylvain	A	IAC-19.D2.6.1
Gómez, Ángel	CA	IAC-19.A4.2.7
Gülhan, Ali	CA	IAC-19.D2.4.5
Gülhan, Ali	CA	IAC-19.D2.6.2

H

H, Maria	CA	IAC-19.A1.4.8
H Managoli, Samana	CA	IAC-19.B4.6B.12
H.S, Varsha	CA	IAC-19.B2.6.6
Haas, Andreas	CA	IAC-19.B6.2.2
Habarulema, John Bosco	CA	IAC-19.D5.3.2
Haber, Roland	CA	IAC-19.B2.1.11
Haber, Roland	A	IAC-19.B4.2.14
Haber, Roland	CA	IAC-19.C1.8.9
Haberman, Mackenzie	A	IAC-19.A1.IP.1
Haces Crespo, Juan Maria	CA	IAC-19.B4.6A.1
Hachiya, Yuri	A	IAC-19.C1.4.2
Hacker, Jacob	A	IAC-19.E6.2.7
Hackett, John	CA	IAC-19.A3.2B.4
Hackett Jr., Edward G.	CA	IAC-19.B6.1.5
Hadaegh, Fred	CA	IAC-19.C1.7.5
Hadji Hossein, Shariar	CA	IAC-19.B2.2.8
Hadji Hossein, Shariar	CA	IAC-19.E1.3.8
Hadji Hossein, Shariar	CA	IAC-19.E2.4.6

Name	Role	Paper
Hadler, Kathryn	CA	IAC-19.C2.IP.10
Haemmerli, Bastien	CA	IAC-19.D2.7.11
Haeuplik-Meusburger, Sandra	A	IAC-19.A3.1.9
Haeuplik-Meusburger, Sandra	A	IAC-19.E4.1.5
Hagel, Philipp	CA	IAC-19.B4.3.2
Hagelschuer, Till	A	IAC-19.A3.4B.9
Hagenaars, Koen	CA	IAC-19.A2.5.9
Haibin, Jiang	A	IAC-19.B1.3.5
Haichuan, Yu	CA	IAC-19.C4.9.13
Haigneré, Claudie	CA	IAC-19.D4.1.2
Haines, Andrew	CA	IAC-19.A3.IP.13
Haines, Sarah	CA	IAC-19.A1.8.3
Halaburda, Dmitriy	A	IAC-19.B6.2.10
Hall, Phil	CA	IAC-19.D3.2B.5
Hall, Victoria	CA	IAC-19.E1.2.9
Hallak, Daniela	CA	IAC-19.D1.1.4
Hallak, Daniela	CA	IAC-19.A1.7.9
Hallak, Yanina	CA	IAC-19.A6.6.3
Hallberg, Michael	CA	IAC-19.C4.10.12
Halpin, Sarah	CA	IAC-19.D1.1.5
Halsband, Arie	CA	IAC-19.D1.6.2
Halter, Boris Ulrich	CA	IAC-19.C2.7.11
Hamajima, Hiroki	A	IAC-19.C2.1.5
Hamblin, Michael	CA	IAC-19.A1.4.15
Hamilton, Fraser	CA	IAC-19.B5.3.1
Hamilton, Patrick	CA	IAC-19.B2.6.1
Hamilton, Scott	A	IAC-19.B2.7.12
Hammond, Walter	A	IAC-19.D2.1.11
Hampton, Robert	CA	IAC-19.B6.1.9
Han, Hwami	CA	IAC-19.D2.IP.1
HAN, PEI	A	IAC-19.B3.1.4
Han, Xiaodong	CA	IAC-19.B6.3.10
Han, Xiaojuan	CA	IAC-19.B2.IP.9
Han, Xingbo	CA	IAC-19.A7.2.2
Han, Xueying	A	IAC-19.E3.3.5
Han-Qing, Zheng	CA	IAC-19.D5.IP.5
Hanacek MSc, John	CA	IAC-19.A5.3-B3.6.7
Hanada, Makoto	CA	IAC-19.A6.2.11
Hanada, Toshiya	CA	IAC-19.A6.2.10
Hanada, Toshiya	CA	IAC-19.A6.2.11
Hand, Kevin	CA	IAC-19.A3.5.5
Hanel, Jeff	CA	IAC-19.A3.3A.8
Hangai, Masatake	CA	IAC-19.C3.2.1
Hanke, Franziska	CA	IAC-19.A3.4B.9
Hanlon, Lorraine	CA	IAC-19.E1.4.6
Hanlon, Lorraine	CA	IAC-19.C1.IP.16
Hanlon, Michelle	CA	IAC-19.D4.2.7
Hanlon, Michelle	CA	IAC-19.B1.6.10
Hanni, Casey	CA	IAC-19.A7.2.7
Hansen, Candy	CA	IAC-19.E4.1.8
Hansen, Daniel	CA	IAC-19.A1.3.18
Hanson, Andrea	CA	IAC-19.A1.4.10
HAO, GENG	A	IAC-19.D2.IP.2
HAO, GENG	A	IAC-19.D2.7.7
Hao, Zhou	A	IAC-19.C2.3.11
Haqq-Misra, Jacob	A	IAC-19.A4.1.9
Haqq-Misra, Jacob	CA	IAC-19.A4.1.17
Haque, Musad	CA	IAC-19.B6.IP.4
Haque, Saad ul	A	IAC-19.B5.1.10
Haramia, Chelsea	A	IAC-19.A4.2.10
Harasymczuk, Matt	A	IAC-19.B3.1.6
Hardgrove, Craig	CA	IAC-19.B4.8.5
Hardy, Ian	A	IAC-19.B4.6B.9
Hargens, Alan	CA	IAC-19.A1.2.7
Harkness, Patrick	CA	IAC-19.D2.5.8
Harkness, Patrick	CA	IAC-19.D2.IP.10
Harmansa, Nicholas	CA	IAC-19.C4.1.10
Harmansa, Nicholas	A	IAC-19.C4.5.8
Harpur, James	CA	IAC-19.B4.4.5
Harrington, Andrea	A	IAC-19.A4.2.1
Harrington, Andrea	CA	IAC-19.E1.4.5
Harris, Julian	CA	IAC-19.B4.5.7
Harris, Julian	CA	IAC-19.B5.3.2
Harris, Katie	CA	IAC-19.D4.2.8
Harris, Katie	A	IAC-19.A1.4.11
Harris, Katie	CA	IAC-19.D3.IP.3
Harrison, Tanya	A	IAC-19.E1.7.3
Harro, John	CA	IAC-19.C4.10.4
Hart, John	CA	IAC-19.A6.4.8
Hartman, Colleen	A	IAC-19.A7.1.1
Hartmann, Dennis	CA	IAC-19.B2.4.3
Hartmann, Jens	CA	IAC-19.B3.4-B6.4.4
Haruyama, Junichi	CA	IAC-19.A3.IP.14
Harvey, David	CA	IAC-19.C2.1.1
Hasanyan, Armanj	A	IAC-19.C2.2.3
Hasbi, Wahyudi	A	IAC-19.E5.4.5
Hasenbein, Aylin-Sophie	A	IAC-19.B1.6.11
Hashimoto, Tatsuaki	CA	IAC-19.A3.2A.6
Hashimoto, Tatsuaki	A	IAC-19.A3.2B.7
Hashimoto, Tomoyuki	CA	IAC-19.C4.1.7
Hashimoto, Tomoyuki	CA	IAC-19.C4.1.11
HASHIMOTO, TOMOYUKI	CA	IAC-19.C4.3.2
Hasic, Dalmir	CA	IAC-19.B3.2.5
Haslam, Sean	CA	IAC-19.B4.8.7
Haslehurst, Andrew	CA	IAC-19.B4.7.1
Hassouneh, Munther	CA	IAC-19.B3.4-B6.4.2
Hastermann, Maria	CA	IAC-19.A1.4.14
Hastings, Jaden	A	IAC-19.A1.IP.13
Hatano, Shintaro	CA	IAC-19.D2.2.4
Hatfield, Aimee	CA	IAC-19.B2.7.11
Haubrich, Jan	CA	IAC-19.C2.5.7
Hauer, Lars-Christian	CA	IAC-19.B4.3.9
Haufler, Amy	CA	IAC-19.B6.IP.4
Hava, Heather	A	IAC-19.B3.7.9
Haw, Robert	CA	IAC-19.A3.5.1
Haws, Terry	A	IAC-19.D2.1.3
Hayashi, Takahiro	CA	IAC-19.A3.2A.6
Hayashi, Teruaki	CA	IAC-19.B4.6B.14
Hayes, Jeffrey	CA	IAC-19.B2.7.3
Hayun, Ehud	A	IAC-19.A3.2A.2
Hayun, Ehud	CA	IAC-19.A3.2A.11
He, YueLong	CA	IAC-19.C4.9.13
Healey, Beth	CA	IAC-19.A1.1.2
Healy, Denis	CA	IAC-19.B4.IP.16
Hearsey, Christopher	A	IAC-19.E7.IP.2
Hebbar, Shrikrishna	CA	IAC-19.C3.3.12
Heckert, Blaze	A	IAC-19.C2.9.2
Heckler, Gregory	A	IAC-19.B2.6.7
Hedman, Niklas	CA	IAC-19.E3.1.1
Heemskerk, Marc	CA	IAC-19.A3.IP.17
Heemskerk, Marc	CA	IAC-19.A7.IP.5
Heenan, Cheyenne	CA	IAC-19.A1.8.4
Heffernan, Luke	A	IAC-19.A6.7.2
Hegde, Uday	CA	IAC-19.A2.2.5
Heidecker, Ansgar	CA	IAC-19.B4.6A.4
Heim, Bettina	CA	IAC-19.B3.3.8
Hein, Andreas Makoto	A	IAC-19.D4.1.11
Hein, Andreas Makoto	CA	IAC-19.D4.3.12
Hein, Andreas Makoto	CA	IAC-19.D4.4.5
Hein, Andreas Makoto	A	IAC-19.D4.5.4
Heiner, Joshua	CA	IAC-19.B2.7.11
Heinz, Nicolas	CA	IAC-19.E2.3-GTS.4.2
Heinz, Nicolas	CA	IAC-19.A2.6.4
Heistand, Christopher	A	IAC-19.B6.IP.4
Heizmann, Sören	CA	IAC-19.A3.2A.4
Held, Alex	CA	IAC-19.B4.IP.17
Helin, Kaj	CA	IAC-19.B3.5.5
Helisch, Harald	CA	IAC-19.A1.7.3
Helisch, Harald	CA	IAC-19.A1.8.5
Hellbourg, Greg	CA	IAC-19.A4.1.2
Hellbourg, Gregory	CA	IAC-19.A4.1.11
Hellmig, Ortwin	CA	IAC-19.A2.1.1
Helvajian, Henry	A	IAC-19.D4.1.1
Hemker, Kevin	CA	IAC-19.C2.5.3
Hempsell, Mark	A	IAC-19.A6.8.11
Henarejos, Philippe	A	IAC-19.E4.3.5
Henderson, Stacey	A	IAC-19.E7.2.6
Hendricks, Terry	A	IAC-19.C3.3.1
Henkel, Maximilian	CA	IAC-19.C2.IP.8
Henkel, Maximilian	CA	IAC-19.D1.5.4

Name	Role	Paper
Henley, Mark	A	IAC-19.C3.1.6
Henn, Norbert	CA	IAC-19.A1.7.3
Henning, Gregory	A	IAC-19.A6.2.7
Henricks, Noah	CA	IAC-19.E2.3-GTS.4.6
Henrique, Luan	CA	IAC-19.E1.IP.18
Henry, Gary	A	IAC-19.D2.1.1
Henson, Phoebe	A	IAC-19.A1.7.8
Henstock, James	CA	IAC-19.A1.8.10
Heras, Jose Martinez	CA	IAC-19.A7.IP.4
Herath, Jeffrey	CA	IAC-19.A3.2B.2
Herbinière, Sébastien	CA	IAC-19.C1.8.3
Hercik, David	CA	IAC-19.A3.4A.6
Hercik, David	CA	IAC-19.B4.8.12
Hercik, David	CA	IAC-19.A3.4B.2
Herczog, Edit	CA	IAC-19.D4.2.9
Herdrich, Georg	CA	IAC-19.C4.5.8
Herdrich, Georg	CA	IAC-19.E2.3-GTS.4.2
Herdrich, Georg	CA	IAC-19.C4.6.3
Herdrich, Georg	CA	IAC-19.B4.IP.12
Herdrich, Georg	CA	IAC-19.C4.IP.21
Herdrich, Georg	CA	IAC-19.D2.IP.5
Herdrich, Georg	CA	IAC-19.E1.IP.24
Herdrich, Georg	CA	IAC-19.B3.7.8
Herdrich, Georg	CA	IAC-19.A2.6.4
Herdrich, Georg	CA	IAC-19.D1.6.5
Herdrich, Georg H.	CA	IAC-19.A2.1.10
Herdrich, Georg H.	CA	IAC-19.C1.1.3
Herdrich, Georg H.	CA	IAC-19.B4.6A.2
Herdrich, Georg H.	CA	IAC-19.C2.6.1
Heredia, Aurelio	CA	IAC-19.B4.6A.7
Herique, Alain	CA	IAC-19.B4.8.12
Herique, Alain	CA	IAC-19.A3.4B.5
Herman, Jacobus	CA	IAC-19.B4.3.12
Herman, Jacobus	CA	IAC-19.B6.3.2
Herman, Justin	CA	IAC-19.E2.3-GTS.4.6
Hermann, Nicole	CA	IAC-19.E3.6.5
HERMEL, Tristan	CA	IAC-19.A1.7.13
Hermosilla, Elvio	CA	IAC-19.E1.2.8
Hermosillo, Emanuel	CA	IAC-19.A1.1.2
Hermosin, Pablo	CA	IAC-19.C1.2.10
Hermosin, Pablo	A	IAC-19.A3.5.4
Hernandez, Sebastian	CA	IAC-19.E1.7.6
Herndon, Kelsey	A	IAC-19.B1.6.2
Hernández, Juan	CA	IAC-19.D3.4.2
Hernández, Víctor Carol	CA	IAC-19.B4.1.13
Herold Wright, Conrad	A	IAC-19.E2.3-GTS.4.7
Herrada Gutiérrez, Miguel Ángel	CA	IAC-19.A2.2.7
Herrera, Cristian	CA	IAC-19.B2.7.11
Herrin, Sara	CA	IAC-19.E1.8.6
Herrmann, Nicole	CA	IAC-19.A3.1.2
Hertel, Victor	A	IAC-19.D1.6.5
Hervieu, Calum	CA	IAC-19.A5.2.9
Hervieu, Calum	CA	IAC-19.A3.2C.10
Herz, Alex	CA	IAC-19.B1.4.6
Herz, Alex	CA	IAC-19.B6.IP.11
Herz, Ella	A	IAC-19.B1.4.6
Herz, Ella	A	IAC-19.B6.IP.11
Herzing, Denise	A	IAC-19.A4.2.6
Herzog, Johannes	CA	IAC-19.A6.IP.21
Herzog, Johannes	A	IAC-19.A6.9.1
Hesuani, Usef	CA	IAC-19.B3.2.10
Heuritsch, Julia	A	IAC-19.A7.IP.3
Heuritsch, Julia	CA	IAC-19.E1.9.3
Heusdens, Richard	CA	IAC-19.D1.2.4
Hibbitts, Karl	CA	IAC-19.B6.IP.4
Hicks, Michael	A	IAC-19.A2.2.5
Hidaka, Nana	CA	IAC-19.B4.6B.14
Higgins, Andrew	A	IAC-19.D4.4.9
Hild, Franziska	CA	IAC-19.E2.3-GTS.4.2
Hild, Franziska	CA	IAC-19.A2.6.4
Hill, Curtis	CA	IAC-19.D3.2B.5
Hill, Ellen	CA	IAC-19.A3.2A.4
Hill, Jonathon	A	IAC-19.E1.6.1
Hill, Patrick	CA	IAC-19.A3.2C.7
Hillebrandt, Martin	CA	IAC-19.A3.3A.11
Hillebrandt, Martin	CA	IAC-19.C4.4.11
Hillebrandt, Martin	CA	IAC-19.C2.7.2
Hillebrandt, Martin	CA	IAC-19.A5.4-D2.8.9
Hines, Glenn	A	IAC-19.A3.2B.2
Hinterman, Eric	CA	IAC-19.A3.3B.10
Hinterman, Eric	CA	IAC-19.B3.5.6
Hirako, Keiichi	CA	IAC-19.B6.2.7
Hirata, Naoyuki	CA	IAC-19.C1.2.4
Hirata, Naru	CA	IAC-19.C1.2.4
Hirn, Attila	CA	IAC-19.A1.5.3
Hitch, Brad	CA	IAC-19.C4.10.15
Hitt, George	CA	IAC-19.C2.6.8
Hixon, Nathan	CA	IAC-19.A5.4-D2.8.11
Hixon, Sean	A	IAC-19.A6.9.6
Ho, Koki	CA	IAC-19.D3.1.4
Ho, Koki	CA	IAC-19.D3.1.6
Ho, Koki	CA	IAC-19.A5.2.4
Ho, Koki	CA	IAC-19.D3.4.4
Ho, Tra Mi	A	IAC-19.A3.4A.6
Ho, Tra Mi	CA	IAC-19.B4.8.12
Ho, Tra Mi	CA	IAC-19.A3.4B.2
Ho, Tra Mi	CA	IAC-19.A3.4B.3
Ho, Tra Mi	CA	IAC-19.A3.4B.8
Hobe, Stephan	CA	IAC-19.E7.3.5
Hobe, Stephan	CA	IAC-19.E7.5.6
Hobsch, Markus	CA	IAC-19.B6.1.11
Hodgson, Edward	CA	IAC-19.E5.1B.4
Hodson, Mark	CA	IAC-19.B5.1.5
Hodum, Alyssa	CA	IAC-19.A5.3-B3.6.8
Hodum, Alyssa	CA	IAC-19.E7.IP.18
Hoettges, Kai	CA	IAC-19.A1.8.10
Hoey, William	CA	IAC-19.D5.3.9
Hoey, William	CA	IAC-19.D5.3.12
Hoeyland, Per	CA	IAC-19.D5.4.7
Hofer, Richard	CA	IAC-19.C4.4.2
Hoffman, Jeffrey	CA	IAC-19.D4.1.2
Hoffman, Jeffrey	CA	IAC-19.D1.2.2
Hoffman, Jeffrey	CA	IAC-19.A3.3B.10
Hoffman, Lars	A	IAC-19.A6.4.3
Hoffman, Tom	CA	IAC-19.A3.3A.4
Hoffmann, Bradley	A	IAC-19.B3.IP.2
Hofmann, Cynthia	CA	IAC-19.D1.6.8
Hofmann, Leonard	CA	IAC-19.D1.3.3
Hofmann, Leonard	CA	IAC-19.E2.3-GTS.4.10
Hofmann, Mahulena	A	IAC-19.E7.3.8
Hogle, Molly	CA	IAC-19.A1.7.5
Hoheneder, Waltraut	CA	IAC-19.E5.1A.1
Hoheneder, Waltraut	CA	IAC-19.A1.7.5
Hohmann, Britta	CA	IAC-19.B4.6B.14
Hokamoto, Shinji	CA	IAC-19.C1.1.1
Hokamoto, Shinji	CA	IAC-19.C1.4.2
Hokamoto, Shinji	CA	IAC-19.C1.9.10
Holbrough, Ian	CA	IAC-19.A6.4.6
Holbrough, Ian	CA	IAC-19.C2.5.2
Holden, Bobby	CA	IAC-19.E2.3-GTS.4.5
Holla, Priyanka	CA	IAC-19.B2.5.10
Holm, Jeanne	A	IAC-19.B5.1.1
Holm, Jeanne	A	IAC-19.E1.7.11
Holmes, Warwick	CA	IAC-19.C4.IP.9
Holsters, Peter	CA	IAC-19.D1.5.1
Holte, Jeffrey	CA	IAC-19.E1.2.11
Holtensdotter Lützhöft, Margaretta	CA	IAC-19.D5.4.3
Homma, Yukihiro	CA	IAC-19.C3.2.1
Hommy, Braden	CA	IAC-19.B4.6A.8
Honda, Chikatoshi	CA	IAC-19.C1.2.4
HONDA, SHUICIRO	CA	IAC-19.C4.3.2
Hong, Gang	CA	IAC-19.D4.1.9
HONG, GYUSIK	CA	IAC-19.A2.7.7
Hong, Rithy	CA	IAC-19.E1.2.11
Hongyu, Chen	CA	IAC-19.C4.3.12
Hopkins, Josh	A	IAC-19.A3.2A.3
Horack, John M.	CA	IAC-19.D2.5.4
Horack, John M.	CA	IAC-19.C2.6.3
Horack, John M.	CA	IAC-19.C2.IP.12
Horack, John M.	CA	IAC-19.C4.IP.22

Name	Role	Paper
Imai, Shigeru	A	IAC-19.A5.1.4
Imam, Rayan	CA	IAC-19.E6.3.2
Imhof, Anna Barbara	CA	IAC-19.E5.1A.1
Imhof, Anna Barbara	A	IAC-19.A1.7.5
Imoto, Takayuki	CA	IAC-19.D2.1.9
Imoto, Takayuki	CA	IAC-19.D2.3.8
Imoto, Takayuki	CA	IAC-19.B4.5.9
Impresario, Gabriele	CA	IAC-19.B4.2.8
Impresario, Gabriele	A	IAC-19.D4.IP.11
Impresario, Gabriele	A	IAC-19.B2.6.2
in Astronomy Forum, of the Women	CA	IAC-19.A7.1.2
INAGAWA, Takahiro	CA	IAC-19.D2.7.6
Inamdar, Karishma	A	IAC-19.A7.2.8
Inamori, Takaya	CA	IAC-19.E2.1.4
Inasawa, Yoshio	CA	IAC-19.B2.2.2
Indyk, Stephen	CA	IAC-19.A3.3B.6
Indyk, Stephen	CA	IAC-19.A3.5.5
Ingrosso, Riccardo	A	IAC-19.D6.3.11
Inocente, Daniel	A	IAC-19.D4.1.2
Inoue, Fumihiro	A	IAC-19.D4.3.7
Inoue, Hiroka	CA	IAC-19.A3.2A.6
Inoue, Natsuhiko	CA	IAC-19.A1.IP.2
Iovanna, Francesco	CA	IAC-19.E1.3.8
Iovanna, Francesco	CA	IAC-19.B2.4.7
Ip-jewell, Susan	CA	IAC-19.A1.1.8
Ip-jewell, Susan	A	IAC-19.A1.3.10
Ip-jewell, Susan	CA	IAC-19.A1.4.1
Ip-jewell, Susan	CA	IAC-19.A1.4.5
Ip-jewell, Susan	CA	IAC-19.A1.4.8
Ip-jewell, Susan	A	IAC-19.A5.3-B3.6.7
Iranmanesh, Mohammad	CA	IAC-19.A2.5.4
Iranmanesh, Mohammad	A	IAC-19.B4.6B.5
Iroka Joy, Chidinma	A	IAC-19.E1.IP.7
Irungu, Lucy	CA	IAC-19.E1.4.4
Irwin, Daniel	CA	IAC-19.B1.6.2
Irwin, Daniel	A	IAC-19.B1.5.1
Isaacson, Howard	CA	IAC-19.A4.1.17
Ise, Toshiyuki	A	IAC-19.D2.1.9
Ishikawa, Yoji	A	IAC-19.D4.3.5
Ishikawa, Yoji	CA	IAC-19.D4.3.7
Ishikawa, Yoji	CA	IAC-19.D4.3.10
Ishikawa, Yoji	CA	IAC-19.D4.3.14
Ishikita, Naoyuki	CA	IAC-19.A1.3.10
Ishimoto, Shinji	CA	IAC-19.D2.6.1
Ishola, Femi	A	IAC-19.B2.2.7
Iskender, Burak Omer	A	IAC-19.C1.5.5
Iskender, Burak Omer	A	IAC-19.C1.6.5
Iskender, Burak Omer	A	IAC-19.C1.8.4
Isleifson, Dustin	CA	IAC-19.B2.1.4
Isleifson, Dustin	CA	IAC-19.B2.IP.4
Israel, David	A	IAC-19.B2.7.3
Israel, David	CA	IAC-19.B2.7.10
Israel, David	CA	IAC-19.B2.7.11
Issac, François	CA	IAC-19.D5.3.8
Issac, François	A	IAC-19.D2.IP.6
Isvoranu, Dragos	CA	IAC-19.C4.9.5
Ito, Akira	CA	IAC-19.A1.3.4
Ito, Hiroaki	CA	IAC-19.B4.6B.14
Ito, Takahiro	A	IAC-19.C1.7.7
Ito, Takashi	CA	IAC-19.D2.4.3
Ito, Takashi	CA	IAC-19.D2.6.4
Ivanco, Marie	CA	IAC-19.D4.5.15
Ivanov, Anton	CA	IAC-19.B4.2.5
Ivanov, Anton	CA	IAC-19.E2.1.7
Ivanov, Anton	CA	IAC-19.A5.2.12
Ivanov, Anton	CA	IAC-19.A1.5.10
Ivanov, Anton	CA	IAC-19.A1.5.11
Ivanov, Anton	CA	IAC-19.B5.2.10
Ivanov, Anton	CA	IAC-19.A3.IP.18
Ivanov, Anton	CA	IAC-19.B4.7.4
Ivanov, Anton	CA	IAC-19.E1.7.9
Ivanov, Anton	CA	IAC-19.A6.8.6
Ivanov, Anton	CA	IAC-19.A2.7.12
Ivanov, Danil	A	IAC-19.C1.5.9
Ivanov, Danil	A	IAC-19.B4.IP.21
Ivaskeviciute, Rusne	CA	IAC-19.B4.8.7
Iwai, Takashi	CA	IAC-19.A6.5.2
Iwasaki, Yohei	CA	IAC-19.B4.6B.14
Iwase, Satoshi	A	IAC-19.A1.3.2
Iyer, Harshith	CA	IAC-19.E7.1.12
Iyer, Harshith	CA	IAC-19.E7.IP.13
Iyomasa, Kazuhiro	CA	IAC-19.C3.2.1
Izmodenov, Vladimir	CA	IAC-19.B4.2.2
Izotova, Anastasia	CA	IAC-19.E5.3.10
Izumiyama, Taku	CA	IAC-19.A6.2.11
Izzo, Gennaro	CA	IAC-19.C2.5.1
J		
J, Paul Murugan	CA	IAC-19.C2.1.12
J. Gasiewski, Albin	CA	IAC-19.E1.4.8
Jackman, Angie	A	IAC-19.C4.2.7
Jackson, Albert	A	IAC-19.A4.1.15
Jackson, Albert	A	IAC-19.E4.2.3
Jackson, David	CA	IAC-19.B4.6B.13
Jackson, Libby	CA	IAC-19.A1.8.10
Jackson, Malcolm	A	IAC-19.A1.8.10
Jackson, Shanessa	CA	IAC-19.B3.1.8
Jackson, Shanessa	A	IAC-19.E3.2.10
Jackson, Shira	CA	IAC-19.A2.1.3
Jacobson, Amber	CA	IAC-19.E1.5.4
Jacobson, David	CA	IAC-19.C4.4.2
Jaeckel, Klaus	CA	IAC-19.B4.6A.1
Jaffe, Paul	A	IAC-19.C3.1.1
JAGDALE, Shripad	A	IAC-19.E7.IP.8
Jah, Moriba	CA	IAC-19.A6.1.8
Jah, Moriba	CA	IAC-19.A6.7.6
Jah, Moriba	CA	IAC-19.A6.8.9
Jah, Moriba	CA	IAC-19.A6.9.4
Jahn, Ingo	A	IAC-19.C3.4.2
Jahnke, Rico	CA	IAC-19.B4.8.12
Jaime, Andrea	CA	IAC-19.A3.2A.11
Jaimes, Gabriel	CA	IAC-19.E1.IP.18
Jain, Ayush	CA	IAC-19.B4.8.7
Jain, Minal	CA	IAC-19.C2.8.10
Jain, Mridul	A	IAC-19.C4.6.9
Jain, Nandini	CA	IAC-19.E2.3-GTS.4.9
Jain, Sambbhav	CA	IAC-19.C4.6.9
Jain, Vidushi	A	IAC-19.B4.3.6
Jakhu, Ram S.	A	IAC-19.E7.2.1
Jakubinek, Michael	CA	IAC-19.C2.8.1
James, Green	A	IAC-19.A3.1.1
Jan, Monica	CA	IAC-19.D2.7.3
Janiak, Kamil	CA	IAC-19.A1.IP.17
Janney, Dorian	A	IAC-19.E1.8.5
Janovsky, Rolf	CA	IAC-19.D1.2.1
Jansen, Frank	A	IAC-19.A3.3A.11
Jansen, Frank	A	IAC-19.C4.4.11
Jansen, Frank	A	IAC-19.E3.IP.4
Jansen, Frank	A	IAC-19.C2.7.2
Jansen, Frank	A	IAC-19.A5.4-D2.8.9
Janvier, Adam	CA	IAC-19.A1.8.10
Jaramillo Morales, Miranda	A	IAC-19.B4.4.11
Jasjukevics, Arturs	A	IAC-19.C2.1.6
Jasper, Phillip	CA	IAC-19.B1.2.1
Jaumann, Ralf	CA	IAC-19.A3.4A.6
Jaumann, Ralf	CA	IAC-19.A3.4B.2
Jayaraman, Yogeshwaran	CA	IAC-19.A3.IP.9
Jayaraman, Yogeshwaran	CA	IAC-19.C1.7.10
Jean, Guerard	CA	IAC-19.D5.3.8
Jean, Isabelle	A	IAC-19.C1.3.6
JEANTY-RUARD, Benjamin	CA	IAC-19.D5.3.8
Jefferies, Sharon	CA	IAC-19.D3.2A.10
Jeffrey, Robert	CA	IAC-19.E1.4.6
Jehn, Rudiger	CA	IAC-19.A6.6.3
Jenkin, Alan B.	A	IAC-19.A6.4.7
Jenner, Simon	CA	IAC-19.E5.IP.10
Jennewein, Thomas	CA	IAC-19.B3.3.8
Jensen, Erik	CA	IAC-19.D3.1.8
Jensen, Filip	CA	IAC-19.C4.10.2

Name	Role	Paper
Jenson, Erica	A	IAC-19.C1.1.8
Jeong, Junyeong	A	IAC-19.C4.IP.14
Jeong, Miri	A	IAC-19.B6.IP.12
Jercaianu, Alexandra	A	IAC-19.B5.2.2
Jerome, Andre	CA	IAC-19.A7.3.5
Jeurissen, Ben	CA	IAC-19.A1.2.4
Jeurissen, Ben	CA	IAC-19.A1.2.5
Jevons, Matthew	CA	IAC-19.D2.4.5
Jewell, April	CA	IAC-19.B4.IP.35
Jeyakodi, Deepika	CA	IAC-19.E7.1.10
Jhagta, Ritika	CA	IAC-19.C3.IP.4
JI, Han	A	IAC-19.C4.IP.18
JI, Han	A	IAC-19.C4.IP.19
Ji, Jinchen	CA	IAC-19.C2.3.12
Ji, Kaihua	CA	IAC-19.A2.6.2
Jian, Li	CA	IAC-19.C4.IP.24
Jiang, Fanghua	CA	IAC-19.C1.2.12
Jiang, Fanghua	CA	IAC-19.C1.9.7
Jiang, Zhuhui	CA	IAC-19.D1.1.5
Jianping, Yuan	CA	IAC-19.A6.IP.10
Jianping, Yuan	CA	IAC-19.B1.IP.11
Jianping, Yuan	CA	IAC-19.B2.6.10
JIAXIAN, ZHANG	CA	IAC-19.C4.IP.1
JIAXIAN, ZHANG	CA	IAC-19.C4.IP.7
Jibril, Babayo Abubakar	CA	IAC-19.B5.2.8
Jillings, Steven	CA	IAC-19.A1.2.4
Jillings, Steven	CA	IAC-19.A1.2.5
Jimenez, Diego	A	IAC-19.D4.4.11
Jimenez Rosero, Henry	A	IAC-19.B2.3.8
Jin, Dan	A	IAC-19.C4.IP.25
Jin, Hao	A	IAC-19.A3.3B.4
Jin, Jin	CA	IAC-19.B2.3.13
Jin, Seung-bo	A	IAC-19.D2.IP.1
Jin, Songzhi	CA	IAC-19.B1.IP.2
Jin, Ya-Qiu	A	IAC-19.B1.IP.3
Jinglang, Feng	A	IAC-19.C1.3.5
Joe, Caram	CA	IAC-19.B3.1.7
Johannes, Bernd	CA	IAC-19.A1.1.2
Johansen, Michael	A	IAC-19.C2.6.2
Johnson, Anne	A	IAC-19.E1.9.9
Johnson, Breanna	CA	IAC-19.C1.9.1
Johnson, Christopher	CA	IAC-19.E3.1.3
Johnson, Christopher	CA	IAC-19.E2.3-GTS.4.7
Johnson, Joseph	CA	IAC-19.D6.1.6
Johnson, Les	A	IAC-19.B4.2.9
Johnson, Les	A	IAC-19.C4.6.11
Johnson, Les	A	IAC-19.C4.10.3
Johnson, Lindley	A	IAC-19.E5.4.4
Johnson, Phyllis	A	IAC-19.A1.1.3
Johnson, Phyllis J.	CA	IAC-19.A1.1.5
Johnson, Phyllis J.	CA	IAC-19.A1.1.7
Johnson, Phyllis J.	CA	IAC-19.A1.1.12
Johnson, Sandra	A	IAC-19.B2.7.6
Jolly, Antoine	CA	IAC-19.A7.3.5
Jolly, Pascal	A	IAC-19.C4.10.1
Jones, Andrew	CA	IAC-19.A6.6.8
Jones, Christopher	A	IAC-19.D4.5.15
Jones, Drew	CA	IAC-19.A3.5.1
Jones, Geraint	CA	IAC-19.C1.IP.7
Jones, Harry	A	IAC-19.D1.5.8
Jones, Harry	A	IAC-19.D3.4.10
Jones, Howard	CA	IAC-19.A3.2B.4
Jones, Karen	A	IAC-19.B4.7.2
Jones, Samantha	CA	IAC-19.A1.8.10
Jones, Therese	CA	IAC-19.E3.3.1
Jonglez, Clement	CA	IAC-19.B4.6A.1
Joosten, Kent	A	IAC-19.A5.2.1
Jorda Siquier, Rafel	CA	IAC-19.B4.IP.18
Jordan, Alejandra	CA	IAC-19.A4.2.7
Jordan, Andrew	CA	IAC-19.A1.5.2
Josan, Poonampreet Kaur	A	IAC-19.B3.8-GTS.2.9
Joseph, Christine	CA	IAC-19.A2.3.1
Joseph, Christine	CA	IAC-19.B3.5.6
Joseph, Christine	A	IAC-19.A2.6.5
Joshi, Asawari	CA	IAC-19.E2.4.9
Joshi, Chirag	CA	IAC-19.E2.3-GTS.4.4
Joshi, Deep	A	IAC-19.A3.IP.10
Joshi, Neelanchal	CA	IAC-19.B4.4.3
Joshua, Jerome Iliya	CA	IAC-19.B5.2.9
Jovanova, Blagica	CA	IAC-19.E1.3.12
Joyner, Claude	A	IAC-19.C3.5-C4.7.4
Ju, Gwanghyeok	A	IAC-19.A3.2A.10
Judd, Emily	CA	IAC-19.A1.3.17
Judd, Emily	CA	IAC-19.D4.5.15
Judd, Samuel	CA	IAC-19.C3.5-C4.7.7
Jukola, Paivi	A	IAC-19.D4.2.10
Jukola, Paivi	A	IAC-19.D3.4.8
Julian, Matthew	A	IAC-19.B1.3.8
Jun, William	CA	IAC-19.B2.4.10
Jun, William	CA	IAC-19.B2.5.6
Jun'ichiro, Kawaguchi	CA	IAC-19.C1.5.3
Jung, Hojin	CA	IAC-19.E3.3.9
Jung, Philippe	A	IAC-19.E4.3.4
Jung, Sangwoo	A	IAC-19.C4.IP.30
Jung, YeonSoo	CA	IAC-19.C4.5.10
Jung, Youngsuk	A	IAC-19.C4.IP.13
Jungang, Chen	A	IAC-19.B5.1.12
Junkins, John	CA	IAC-19.C1.1.11
Junkins, John	CA	IAC-19.C1.2.8
Jurga, Anna	CA	IAC-19.A1.IP.8
Jurga, Anna	A	IAC-19.A1.IP.17
Jutzi, Martin	CA	IAC-19.A3.4B.5
Jwajoras, Julia	A	IAC-19.A3.IP.16
Jäger, Markus	A	IAC-19.C4.1.9
Jäger, Markus	A	IAC-19.D2.3.9
K		
K, Shanthini	A	IAC-19.E6.1.11
K. Pfeiffer, Ernst	CA	IAC-19.B2.4.3
K.L, Sudha	CA	IAC-19.B2.6.6
Kabade, Mansi	CA	IAC-19.E2.4.7
Kabade, Mansi	CA	IAC-19.E2.4.8
Kaczmarzyk, Marcin	CA	IAC-19.A1.6.7
Kaczmarzyk, Marcin	CA	IAC-19.A1.6.11
Kafi, Abdulla Hil	CA	IAC-19.B4.IP.31
KAGAMI, Yukako	CA	IAC-19.B3.1.2
KAGAMI, Yukako	A	IAC-19.B3.3.13
Kahle, Ralph	CA	IAC-19.B6.2.8
Kahle, Ralph	CA	IAC-19.A6.IP.21
Kahraman, Büşra	CA	IAC-19.C4.2.13
Kaiser, Stefan A.	A	IAC-19.E7.4.2
Kajino, Satoshi	CA	IAC-19.C2.5.5
Kaku, Kazuya	CA	IAC-19.B5.2.3
Kalgaonkar, Parth	A	IAC-19.B4.4.3
Kalinin, Sergey	CA	IAC-19.A1.4.13
Kalinowski, William	CA	IAC-19.B4.2.3
Kalita, Himangshu	A	IAC-19.D4.1.5
Kallemeyn, Pieter	CA	IAC-19.A3.3A.9
Kallergis, Georgios	CA	IAC-19.B3.8-GTS.2.6
Kalnay, Mary Grace	A	IAC-19.B4.9-GTS.5.2
Kalnay, Mary Grace	A	IAC-19.D3.IP.2
Kalnay, Mary Grace	A	IAC-19.D5.IP.3
Kalsch, Nathaniel	CA	IAC-19.E2.4.3
Kaltenhaeuser, Sven	A	IAC-19.D6.1.5
Kaltenhaeuser, Sven	CA	IAC-19.E6.3.13
Kaltenhaeuser, Sven	CA	IAC-19.E3.4.8
Kaluthantrige, Aurelio	CA	IAC-19.D4.2.8
Kaluthantrige, Aurelio	CA	IAC-19.A5.1.7
Kaluthantrige, Aurelio	CA	IAC-19.D3.IP.3
Kamaletdinova, Guzel	CA	IAC-19.A1.7.10
Kamas, Becky	A	IAC-19.E1.2.6
Kameda, Shingo	CA	IAC-19.A3.4B.9
Kamenev, Nikita	CA	IAC-19.A6.6.1
Kamesaki, Sakiko	CA	IAC-19.B3.3.1
Kaminski, Amy	A	IAC-19.E3.2.4
Kamiya, Kohki	CA	IAC-19.B6.2.7
Kamiya, Toshio	A	IAC-19.C1.5.12
Kamps, Landon	A	IAC-19.C4.8-B4.5A.12
KANAI, Ryuichiro	A	IAC-19.D2.7.6

Name	Role	Paper
Kanamori, Hiroshi	CA	IAC-19.A3.2A.6
Kanani, Keyvan	CA	IAC-19.A6.6.7
Kanasashi, Arimasa	CA	IAC-19.B2.2.2
Kanawka, Krzysztof	A	IAC-19.E6.2.3
Kanawka, Krzysztof	A	IAC-19.E3.3.10
Kane, Megan	A	IAC-19.E6.4.12
Kane, Stephen	CA	IAC-19.A4.1.9
Kaneko, Takao	CA	IAC-19.D2.4.3
Kaneko, Yuuki	CA	IAC-19.A5.1.4
Kang, Indeuk	CA	IAC-19.C2.IP.9
Kang, Jin	CA	IAC-19.B4.6B.9
Kang, Qi	CA	IAC-19.A2.2.3
Kang, Qi	A	IAC-19.A2.3.4
Kang, Sunil	A	IAC-19.D2.2.9
Kang, Sunil	A	IAC-19.D2.IP.4
Kaniewski, Damian	CA	IAC-19.D2.6.8
Kanter, Matthew	CA	IAC-19.B4.5.4
Kaparthy, Akash	CA	IAC-19.B4.6A.1
Kapitola, Sascha	CA	IAC-19.C1.5.7
Kapitola, Sascha	CA	IAC-19.E1.8.4
Kaplan, Marshall	A	IAC-19.B6.2.6
Kaplan, Marshall	A	IAC-19.A6.5.8
Kapoglou, Angeliki	A	IAC-19.E3.2.8
Kapoglou, Angeliki	CA	IAC-19.E7.IP.22
Kara, Ozan	A	IAC-19.C4.2.13
Karabadzhak, George	CA	IAC-19.A3.2A.9
Karabadzhak, Georgy	CA	IAC-19.B3.3.1
Karabeyoglu, Arif	CA	IAC-19.C4.2.13
Karaguppi, Atharva	CA	IAC-19.E2.3-GTS.4.4
Karaiskos, Pantelis	CA	IAC-19.A1.5.1
Karakas, Hakki	CA	IAC-19.C4.2.13
Karasik, Elena	A	IAC-19.C2.4.8
Karatekin, Ozgur	A	IAC-19.A3.4B.6
Karatekin, Özgür	CA	IAC-19.A3.4B.5
Karatekin, Özgür	CA	IAC-19.A3.4B.8
Karl, Christof	CA	IAC-19.D2.7.11
Karl, Sebastian	CA	IAC-19.D2.4.2
Karl, Sebastian	CA	IAC-19.D2.4.5
Karma, Alain	CA	IAC-19.A2.6.2
Karmustaji, Saeed	CA	IAC-19.B3.1.5
Karnal, Manohar	CA	IAC-19.A5.1.9
Karouia, Fathi	A	IAC-19.A2.7.8
Karouji, Yuzuru	CA	IAC-19.A3.2A.6
Karunanithi, Visweswaran	CA	IAC-19.A7.3.11
Karunanithi, Visweswaran	CA	IAC-19.B4.7.12
Karunanithi, Visweswaran	A	IAC-19.B2.7.5
Kasagi, Yusuke	CA	IAC-19.C2.1.5
Kashanov, Olexandr	A	IAC-19.A3.IP.1
Kashioka, Shuya	CA	IAC-19.C1.9.8
Kashirina, Daria	CA	IAC-19.A2.7.10
Kashiyama, Reo	CA	IAC-19.B4.6B.14
KASPAR, KAMALANATHAN	A	IAC-19.D5.2.10
KATANO, Syotaro	CA	IAC-19.C3.2.5
Kataoka, Seita	CA	IAC-19.C2.2.9
Kataria, Dhiren	CA	IAC-19.A2.1.10
Kataria, Dhiren	CA	IAC-19.C1.1.3
Kataria, Dhiren	CA	IAC-19.B4.6A.2
Kataria, Dhiren	CA	IAC-19.C2.6.1
Katkoori, Vishnu	A	IAC-19.B4.9-GTS.5.10
Kato, Masaki	CA	IAC-19.B4.6B.14
Kato, Nobuji	CA	IAC-19.C4.IP.34
Kato, Takahiro	CA	IAC-19.C1.IP.5
Katushkina, Olga	CA	IAC-19.B4.2.2
Katz, Dan	A	IAC-19.B1.3.6
Kaufmann, Christof	CA	IAC-19.B5.1.2
Kaufmann, Christof	CA	IAC-19.B2.3.12
KAUR, JASLEEN	A	IAC-19.A1.1.8
Kaur, Jivat Neet	CA	IAC-19.B4.9-GTS.5.10
Kaur, Navneet	CA	IAC-19.D4.4.9
Kavvada, Argyro	A	IAC-19.B1.6.3
Kawabata, Nobuyoshi	CA	IAC-19.B4.6B.14
Kawabata, Yo	CA	IAC-19.D2.2.4
Kawabata, Yo	A	IAC-19.C4.IP.34
Kawaguchi, Junichiro	CA	IAC-19.C1.3.9
Kawai, Tatsuki	A	IAC-19.C2.IP.17
Kawakatsu, Yasuhiro	CA	IAC-19.C1.2.5
Kawakatsu, Yasuhiro	CA	IAC-19.C1.2.6
Kawakatsu, Yasuhiro	CA	IAC-19.E2.1.6
Kawakatsu, Yasuhiro	CA	IAC-19.C1.4.7
Kawakatsu, Yasuhiro	A	IAC-19.A3.4B.7
Kawakita, Shirou	CA	IAC-19.B1.1.4
Kawakita, Shirou	CA	IAC-19.B1.4.5
Kawalec, Michał	CA	IAC-19.C4.9.6
Kawamoto, Satomi	A	IAC-19.A6.2.10
Kawarabayashi, Daishi	CA	IAC-19.C2.2.9
Kawashima, Hideto	CA	IAC-19.C4.3.7
Kaya, Nobuyuki	A	IAC-19.B4.IP.11
Kayal, Hakan	A	IAC-19.A4.1.13
Kayal, Hakan	CA	IAC-19.B6.IP.2
Kayal, Hakan	CA	IAC-19.C1.IP.10
Kayal, Kagan	CA	IAC-19.A3.4A.6
Kayal, Kagan	CA	IAC-19.A3.4B.2
Kayama, Yuki	CA	IAC-19.C1.4.2
Kazaniecki, Michał	CA	IAC-19.A3.IP.16
Kazemi, Hamid	A	IAC-19.E7.7.5
Ke, Fa-wei	A	IAC-19.A6.IP.15
Kearney, Mike	A	IAC-19.B1.4.7
Kebe, Fatoumata	CA	IAC-19.B3.IP.7
Kedia, Raj	CA	IAC-19.C4.5.9
Keep, Joshua	CA	IAC-19.C3.4.2
Keim, Jonas	A	IAC-19.B4.3.2
Kelecy, Thomas	CA	IAC-19.C1.9.9
Kellas, Sotiris	CA	IAC-19.A3.3A.3
Kelley, Brandon	CA	IAC-19.B4.5.2
Kelly, Jack	CA	IAC-19.A6.7.2
Kempf, Florian	CA	IAC-19.B4.3.5
Kempf, Florian	CA	IAC-19.C1.8.9
Kempf, Florian	A	IAC-19.C1.8.11
Kennedy, William	A	IAC-19.B2.7.4
Kent, John T	CA	IAC-19.A6.7.6
Kent, John T	CA	IAC-19.A6.9.4
Keppler, Jochen	CA	IAC-19.A1.7.3
Keppler, Jochen	CA	IAC-19.A1.8.5
Kerby, Richard	CA	IAC-19.E1.7.11
Kerjean, Laurent	CA	IAC-19.A3.3A.5
Kerolle, Mclee	A	IAC-19.E1.7.6
KERROUCHE, Kamel Djamel Eddine	CA	IAC-19.B4.4.10
Kerschmann, Russell	CA	IAC-19.A1.IP.14
Kerschmann, Russell	CA	IAC-19.A1.7.16
Kersey, George	CA	IAC-19.A2.1.9
Kerstens, Nathalie	A	IAC-19.D4.2.9
Kerstens, Nathalie	A	IAC-19.D5.2.9
Keshtkar, Sajjad	CA	IAC-19.C1.5.6
Kessler, Paul	CA	IAC-19.B3.7.3
Keys, Sian	CA	IAC-19.E5.IP.7
Khaldi, Hanan	CA	IAC-19.E1.5.5
Khamees, Rania	CA	IAC-19.A5.4-D2.8.10
Khan, Abdul Rehman	CA	IAC-19.D4.4.9
Khan, Arifur R.	CA	IAC-19.B4.6A.12
Khan, Michael	CA	IAC-19.A3.4A.9
Khan, Muhammad	A	IAC-19.B4.6B.13
Khan, Sadben	A	IAC-19.C2.IP.19
Khan, Sara	CA	IAC-19.D1.1.5
Khan, Sara	CA	IAC-19.A2.4.5
Khan, Shawn	A	IAC-19.A1.IP.9
Khare, PRATHAMESH	CA	IAC-19.E2.4.9
Kharlamov, Maksim	CA	IAC-19.B3.4-B6.4.6
Kharlamov, Maksim	CA	IAC-19.B3.5.4
Kharlamov, Maxim	CA	IAC-19.B3.2.4
Kharlan, Alexander	CA	IAC-19.B4.IP.21
Kharlan, Iana	A	IAC-19.C4.6.10
Khlystov,, Nikolai	CA	IAC-19.A6.8.9
Khukhrina, Olga	CA	IAC-19.C1.1.6
Khum, Seyha	CA	IAC-19.E1.2.11
KHWAMBALA, PATRICIA	A	IAC-19.B1.5.8
Kibbey, Timothy	A	IAC-19.D2.7.13
Kicman, Pawel	CA	IAC-19.C1.7.12
Kiefer, Stephen	CA	IAC-19.C3.4.1
Kiem, Jason	CA	IAC-19.A1.7.9
Kiesling, Paul	CA	IAC-19.E1.2.2

Name	Role	Paper
Kigoshi, Mari	CA	IAC-19.A5.1.4
Kijewski, Seth	CA	IAC-19.A3.5.1
Kikuchi, Shota	A	IAC-19.C1.2.4
Kikuchi, Shota	CA	IAC-19.A3.4A.3
Kikuchi, Shota	CA	IAC-19.C1.7.2
Kikuchi, Shota	CA	IAC-19.A3.4B.1
Kiley, Andrew	CA	IAC-19.C2.1.9
Killian, Matthias	CA	IAC-19.D1.3.6
Kim, Byungjin	CA	IAC-19.B1.2.5
Kim, Cheulwoong	A	IAC-19.C4.1.12
Kim, Ee-Eul	CA	IAC-19.B4.1.1
Kim, Ee-Eul	CA	IAC-19.B1.2.5
Kim, Eugene D	CA	IAC-19.B4.1.1
Kim, Eugene D	A	IAC-19.B1.2.5
Kim, Hae-Dong	CA	IAC-19.A6.IP.11
Kim, Hae-Dong	CA	IAC-19.A6.IP.12
Kim, Hae-Dong	CA	IAC-19.B6.IP.12
Kim, Hansol	CA	IAC-19.C4.IP.5
KIM, HEERAK	A	IAC-19.A2.IP.7
KIM, HEERAK	CA	IAC-19.A2.7.7
Kim, Hong Soo (Tony)	CA	IAC-19.E5.1A.8
Kim, Hyun Jung	CA	IAC-19.B1.3.8
Kim, Inkyu	A	IAC-19.B2.5.5
Kim, Ji-Seok	CA	IAC-19.A6.IP.11
Kim, Ji-Seok	A	IAC-19.A6.IP.12
Kim, Jin-Hyung	CA	IAC-19.A6.IP.11
Kim, Jinhan	CA	IAC-19.D2.IP.1
Kim, Jinhyuk	A	IAC-19.C2.IP.9
Kim, Ju Won	A	IAC-19.C4.5.10
Kim, KangSan	A	IAC-19.E6.5-GTS.1.2
Kim, Kyu-Seop	A	IAC-19.C4.5.11
Kim, Moon	A	IAC-19.D2.2.8
Kim, Myoungjin	A	IAC-19.C4.IP.12
Kim, Sangkyun	CA	IAC-19.B4.1.19
Kim, Sangkyun	CA	IAC-19.B4.6B.6
Kim, Taegyu	CA	IAC-19.C4.IP.12
Kim, Taig Young	A	IAC-19.A2.IP.3
Kim, Taig Young	CA	IAC-19.A2.IP.7
Kim, Taig Young	CA	IAC-19.A2.7.7
Kim, Tony	CA	IAC-19.B1.5.1
Kim, Wousik	CA	IAC-19.D5.3.9
Kim, Yongchan	CA	IAC-19.C4.IP.11
Kim, Youngkyu	CA	IAC-19.A6.4.6
Kim, Youngkyu	CA	IAC-19.E7.7.4
Kim-Castet, So Young	CA	IAC-19.B3.5.7
Kimani, John Njoroge	CA	IAC-19.B4.1.9
Kimani, John Njoroge	CA	IAC-19.E1.4.4
Kimani, Julius	A	IAC-19.B1.6.5
Kimler, Beau	CA	IAC-19.E1.2.2
Kimmel, Lauri	CA	IAC-19.D2.IP.14
Kimoto, Kenichi	CA	IAC-19.C4.10.7
Kimura, Shinichi	A	IAC-19.E1.3.7
Kimura, Toshiya	CA	IAC-19.C4.1.7
Kimura, Toshiya	A	IAC-19.C4.1.11
KIMURA, TOSHIYA	CA	IAC-19.C4.3.2
Kinefuchi, Kiyoshi	CA	IAC-19.C4.IP.15
King, Caitlin	A	IAC-19.A5.3-B3.6.5
King, Derek	CA	IAC-19.A3.2C.7
King, Jonny	CA	IAC-19.B4.4.1
Kingston, Jenny	CA	IAC-19.D3.2A.8
Kingston, Jenny	CA	IAC-19.D4.5.14
Kinnaird, Alexander	CA	IAC-19.E1.3.2
Kinnari, Maarit	CA	IAC-19.B4.8.7
Kinnison, James	CA	IAC-19.A5.4-D2.8.4
Kinsner, Witold	CA	IAC-19.E1.IP.26
Kinzelman, Phoebe	CA	IAC-19.A7.1.1
Kio, Michael	A	IAC-19.C2.8.5
Kirchberger, Christoph	CA	IAC-19.C4.9.1
Kirchheck, Daniel	CA	IAC-19.D2.4.5
Kirchhoff, Oliver	CA	IAC-19.E1.7.4
Kirchner, Frank	CA	IAC-19.D1.4A.6
Kirsch, Marcus G F	CA	IAC-19.B6.3.1
Kirubarajan, Abirami	CA	IAC-19.A1.IP.9
Kitade, Tomoya	CA	IAC-19.C1.2.5
Kitaeva, Alena	CA	IAC-19.D4.1.8

Name	Role	Paper
Kitayama, Osamu	CA	IAC-19.A5.4-D2.8.5
Kitmacher, Gary	A	IAC-19.B3.5.2
Kivastik, Joosep	CA	IAC-19.B4.8.7
Kiyan, Wataru	CA	IAC-19.A1.3.4
Klai, Saliha	CA	IAC-19.B6.3.5
Klauda, Jeffery	CA	IAC-19.C2.8.5
Klaus, David	CA	IAC-19.A1.8.2
Klein, Leland	A	IAC-19.A5.4-D2.8.11
Klein Wolt, Marc	CA	IAC-19.B4.2.11
Klein Wolt, Marc	CA	IAC-19.A3.2B.1
Kleina, Artur	A	IAC-19.A1.6.7
Kleina, Artur	A	IAC-19.A1.6.11
Kleinschrodt, Alexander	CA	IAC-19.B4.3.5
Klesh, Andrew	A	IAC-19.B4.8.1
Klevanski, Josef	CA	IAC-19.D2.4.2
Klevanski, Josef	CA	IAC-19.D2.4.5
Klevanski, Josef	CA	IAC-19.D2.6.2
Kline, Heather	A	IAC-19.C2.7.1
Kling, Alexandre	CA	IAC-19.B4.8.13
Klinkner, Sabine	CA	IAC-19.B4.3.2
Klinkner, Sabine	CA	IAC-19.D1.3.5
Klinkner, Sabine	CA	IAC-19.E1.4.7
Klinkner, Sabine	CA	IAC-19.B4.IP.12
Klinkner, Sabine	CA	IAC-19.E1.IP.24
Klioner, Elizabeth	CA	IAC-19.B4.6A.1
Klovstad, Jordan	CA	IAC-19.D4.5.15
Knapman, John	A	IAC-19.D4.3.6
Kneisel, Kieran	CA	IAC-19.A5.3-B3.6.3
Knezek, Patricia	CA	IAC-19.E3.2.10
Knickmann, Daniela	CA	IAC-19.A1.7.4
Knight, Lily	CA	IAC-19.A1.5.5
Knittel, Jeremy	CA	IAC-19.C1.2.11
Knittel Kommel, Renata	A	IAC-19.B1.6.6
Knollenberg, Jörg	CA	IAC-19.A3.4A.6
Knollenberg, Jörg	CA	IAC-19.A3.4B.8
Knopf, Bill	CA	IAC-19.B2.7.3
Knopp, Andreas	CA	IAC-19.B2.4.3
Knopp, Marcus	CA	IAC-19.B6.1.2
Knott, Geoffrey	A	IAC-19.C2.2.12
Knutsen, Elise	CA	IAC-19.A7.2.10
Ko, Jeonghwan	CA	IAC-19.D2.IP.1
Koay, Chin Yang	CA	IAC-19.B1.4.2
Kobald, Mario	A	IAC-19.D2.7.8
Kobayashi, Teiu	CA	IAC-19.C4.1.4
Kobayashi, Yusuke	CA	IAC-19.A6.5.2
Kobrick, Ryan	CA	IAC-19.B3.IP.1
Kobrick, Ryan	CA	IAC-19.B3.8-GTS.2.5
Koch, Helmut	CA	IAC-19.B3.7.8
Koch, Michael	CA	IAC-19.D2.3.2
Koeleman, Rick	CA	IAC-19.B4.4.4
Koenig Fuisz, Amanda	CA	IAC-19.E5.IP.2
Kofman, Wlodek	CA	IAC-19.B4.8.12
Koga, Shohei	A	IAC-19.C4.10.7
Koh, Saranthip	A	IAC-19.C2.8.11
Kohler, Hannah	CA	IAC-19.E7.3.17
Kohlleppel, Robert	CA	IAC-19.A6.IP.3
Kohmura, Takayoshi	CA	IAC-19.E1.3.7
Koide, Sae	CA	IAC-19.B4.6B.14
Koike, Kaishu	CA	IAC-19.D4.3.11
Koike, Kaishu	A	IAC-19.D4.3.14
Kojima, Ayami	CA	IAC-19.B3.3.2
Kojima, Ayami	A	IAC-19.E1.6.8
Kojima, Hirohisa	A	IAC-19.C1.5.6
Kokkalis, Panos	CA	IAC-19.E1.4.8
Kolibabska, Marta	A	IAC-19.E3.IP.10
Koller, Valerie F.	CA	IAC-19.E3.1.6
Kolodziejczyk, Agata	CA	IAC-19.B3.1.6
Koloteva, Milena	CA	IAC-19.A1.3.1
Komendera, Erik	CA	IAC-19.A5.3-B3.6.6
Kondoyanni, Maria	CA	IAC-19.B3.8-GTS.2.6
Kong, Fanchao	CA	IAC-19.C4.IP.1
Kong, Fanchao	A	IAC-19.C4.IP.7
Konoue, Kazuya	A	IAC-19.B1.2.6
Konstantin Fuss, Franz	CA	IAC-19.A5.2.8
Konstantinidis, Menelaos	CA	IAC-19.A3.3B.12

Name	Role	Paper
Kontoes, Haris	CA	IAC-19.C1.1.5
Kontogiannis, Efthymios Akis	CA	IAC-19.E1.IP.29
Kopecky, Denise	A	IAC-19.E1.1.1
Kopp, Emanuel	CA	IAC-19.A3.4B.9
Kopp, Martin	CA	IAC-19.A1.7.4
Kopparapu, Ravi	CA	IAC-19.A4.1.9
Koprowski, Evon	CA	IAC-19.E5.IP.10
Kordella, Scott	CA	IAC-19.D6.1.6
Kordella, Scott	CA	IAC-19.E3.IP.7
Kordella, Scott	CA	IAC-19.A6.7.10
Kordella, Scott	CA	IAC-19.D5.4.9
Koren, Ilan	CA	IAC-19.D1.6.3
Koreshev, Igor	CA	IAC-19.B3.2.4
Koretskii, Maxim	CA	IAC-19.E2.4.5
Korkiakoski, Visa	CA	IAC-19.A6.4.8
Korn, Nikolas	CA	IAC-19.B4.IP.2
Korn, Nikolas	CA	IAC-19.B4.6B.11
Korolev, Vladimir	CA	IAC-19.C2.1.4
Korosu, Thomas	CA	IAC-19.B5.1.1
Koroteev, A.C.	CA	IAC-19.A3.3A.11
Koroteev, A.C.	CA	IAC-19.C4.4.11
Koroteev, A.C.	CA	IAC-19.A5.4-D2.8.9
Koroteev, Anatoly	CA	IAC-19.C2.7.2
Koroteev, Anatoly S.	CA	IAC-19.E3.IP.4
Korpela, Eric	CA	IAC-19.A4.2.4
Korth, David	CA	IAC-19.B3.3.14
Korzun, Ashley	A	IAC-19.A3.3B.13
Kosenko, Ivan	CA	IAC-19.D4.3.16
Kosmann, William	A	IAC-19.B4.2.1
Kosmann, William	A	IAC-19.E4.1.8
Kostov, Veselin	CA	IAC-19.A4.1.9
Kothandhapani, Adithya	CA	IAC-19.A3.IP.9
Kotsur, Oleg	CA	IAC-19.C4.6.7
Koudelka, Otto	CA	IAC-19.B2.2.9
Koudelka, Otto	CA	IAC-19.B4.3.7
Koudelka, Otto	CA	IAC-19.B1.3.4
Koudelka, Otto	CA	IAC-19.B4.9-GTS.5.12
Koudelka, Otto	A	IAC-19.B2.7.7
Koudelka, Otto	CA	IAC-19.B2.7.8
Koudelka, Otto	CA	IAC-19.D1.5.4
Koul, Vatasta	CA	IAC-19.C2.7.7
Kovacs, Jayden	CA	IAC-19.C3.4.2
Kovacs III, Emerich	CA	IAC-19.B2.IP.4
Kovacs III, Emerich	A	IAC-19.B4.IP.32
Kovacs III, Emerich	CA	IAC-19.E1.IP.26
Kovalenko, Irina	A	IAC-19.C1.2.9
Kovalenko, Irina	A	IAC-19.B3.3.11
Kovalov, Andrii	CA	IAC-19.D1.4B.5
Kozitsyn, Egor	CA	IAC-19.C2.1.4
Kozlovskaya, Inesa	CA	IAC-19.A1.2.4
Kozlovskaya, Inesa	CA	IAC-19.A1.2.5
Krag, Holger	CA	IAC-19.A6.2.1
Krag, Holger	CA	IAC-19.A6.4.2
Krag, Holger	CA	IAC-19.A6.4.4
Krag, Holger	CA	IAC-19.A6.8.9
Krainak, Michael	CA	IAC-19.B2.7.11
Krainovic, Anselm	A	IAC-19.B6.IP.2
Krainovic, Anselm	CA	IAC-19.C1.IP.10
Krajčovič, Stanislav	CA	IAC-19.A6.1.6
Krammer, Anett	CA	IAC-19.D2.4.5
Kraus, Alexander	CA	IAC-19.A1.4.15
Krause, Christian	CA	IAC-19.A3.4A.6
Krause, Christian	A	IAC-19.A3.4B.2
Krause, Christian	CA	IAC-19.A3.4B.8
Krause, Daniel	CA	IAC-19.D2.4.2
Krawczuk, Szymon	CA	IAC-19.A2.3.7
Kreft, Dradin	CA	IAC-19.B1.6.10
Kreisel, Joerg	A	IAC-19.D3.2B.6
Krejci, David	CA	IAC-19.C4.8-B4.5A.13
Kremic, Tibor	A	IAC-19.A7.1.4
Krenn, Rainer	CA	IAC-19.A3.4B.8
Kressler, Ryan	CA	IAC-19.A5.3-B3.6.8
Kretschmar, Peter	CA	IAC-19.D5.3.3
Krezel, Jonathan	CA	IAC-19.A3.1.2
Krimigis, Stamatios	CA	IAC-19.D4.4.1

Name	Role	Paper
Kristmundsson, Darri	CA	IAC-19.C4.3.3
Krokstedt, Christian	A	IAC-19.D2.2.7
Krokstedt, Christian	CA	IAC-19.A2.5.6
Krueger, Thomas	CA	IAC-19.A5.3-B3.6.2
Kruijver, Amanda	CA	IAC-19.A7.IP.5
Krupke, Dominik	CA	IAC-19.B6.2.2
Krutzik, Markus	CA	IAC-19.B4.6A.1
Kruzelecky, Roman	CA	IAC-19.A3.2B.6
Kryza, Lennart	CA	IAC-19.D5.1.3
Krzyśka, Ryszard	A	IAC-19.A1.8.8
Kuang, Linling	CA	IAC-19.B2.3.11
Kuang, Linling	CA	IAC-19.B2.3.13
Kubendran, LK	CA	IAC-19.D3.4.1
Kubicka, Manuel	CA	IAC-19.C2.IP.8
Kubicka, Manuel	CA	IAC-19.D1.5.4
Kubitza, Simon	CA	IAC-19.A3.4B.9
Kubo-oka, Toshihiro	CA	IAC-19.B2.2.2
Kubota, Takashi	CA	IAC-19.A3.4A.4
Kucharski, Daniel	CA	IAC-19.A6.1.5
Kucharski, Daniel	CA	IAC-19.A6.1.8
Kud-Sverchkov, Sergei	CA	IAC-19.B3.4-B6.4.6
Kud-Sverchkov, Sergei	CA	IAC-19.B3.5.4
Kueffner, Peter	CA	IAC-19.E1.IP.5
Kuehn, Daniel	CA	IAC-19.D1.4A.6
Kuehn, Simone	CA	IAC-19.A1.1.1
Kueppers, Michael	CA	IAC-19.A3.4A.9
Kueppers, Michael	CA	IAC-19.A3.4B.5
Kuetemeier, Marius	CA	IAC-19.C2.4.10
Kufahl, Katelyn	A	IAC-19.A3.IP.5
Kufahl, Katelyn	A	IAC-19.D4.IP.8
Kuh, Andrew	A	IAC-19.E5.3.4
Kuhm, Hendrik	CA	IAC-19.E1.IP.24
Kuhns, Matthew	CA	IAC-19.A3.2A.7
Kuhns, Matthew	A	IAC-19.C2.5.9
Kuijper, Jim C.	CA	IAC-19.A3.3A.11
Kuijper, Jim C.	CA	IAC-19.A5.4-D2.8.9
Kuiper, Hans	CA	IAC-19.B2.5.7
Kuiper, JM (Hans)	A	IAC-19.B1.3.9
Kujawa, Faith	CA	IAC-19.D1.4B.4
Kuk, Jung Won	CA	IAC-19.C4.IP.16
Kukhta, Andrew	CA	IAC-19.C4.1.6
Kulagin, Sergey	CA	IAC-19.C4.4.4
Kuligowski, Piotr	CA	IAC-19.B4.9-GTS.5.5
Kuligowski, Piotr	CA	IAC-19.C2.IP.21
Kulik, Antonina	CA	IAC-19.B6.2.10
Kulkarni, Ravindra	CA	IAC-19.A4.2.11
Kulkarni, Ravindra	CA	IAC-19.B2.5.10
KULKARNI, ROHIT	CA	IAC-19.E2.4.9
Kullack, Karsten	CA	IAC-19.A3.2C.6
Kullack, Karsten	CA	IAC-19.A3.2C.8
Kumar, Bhanu	A	IAC-19.C1.4.9
Kumar, Krishna	CA	IAC-19.C1.IP.1
Kumar, Saroj	CA	IAC-19.A2.IP.5
Kumar Madakashira, Hemanth	CA	IAC-19.D1.3.6
Kumar Madakashira, Hemanth	CA	IAC-19.A3.2C.6
Kumar Madakashira, Hemanth	CA	IAC-19.A3.2C.8
Kumar S., Sunil	CA	IAC-19.C4.4.7
Kumar Tetarwal, Hitesh	A	IAC-19.A5.IP.9
Kunes, Michal	A	IAC-19.E6.1.6
Kuninaka, Hitoshi	CA	IAC-19.C4.4.12
Kuninaka, Hitoshi	CA	IAC-19.C4.IP.15
Kunitskaya, Alina	A	IAC-19.A5.IP.4
Kunstadter, Christopher	A	IAC-19.E3.6.7
Kuramoto, Kiyoshi	CA	IAC-19.A3.4B.8
Kuratomi, Takeshi	CA	IAC-19.B4.6B.14
Kurian, Thomas	CA	IAC-19.C2.1.12
Kurita, Jorge	CA	IAC-19.E1.2.8
Kuritsin, Andrey	A	IAC-19.B3.2.4
Kuritsin, Andrey	A	IAC-19.B3.4-B6.4.6
Kuritsin, Andrey	A	IAC-19.B3.5.4
Kuriyama, Ikuko	A	IAC-19.B1.1.5
Kurkure, Rinkesh	A	IAC-19.A3.5.8
Kurkure, Rinkesh	CA	IAC-19.A1.8.7
Kuroda, Shinsuke	CA	IAC-19.B6.2.7
Kuroki, Hiroshi	CA	IAC-19.A1.3.4

Name	Role	Paper
Kurosaki, Hirohisa	CA	IAC-19.B6.2.7
Kurosaki, Madoka	CA	IAC-19.B4.6B.14
Kurose, Ryoichi	CA	IAC-19.C4.10.11
Kusano, Masaaki	CA	IAC-19.B2.2.2
Kushida, Karin	A	IAC-19.A3.IP.14
Kussmaul, Anna	A	IAC-19.B3.2.10
Kusumawardani, Pratiwi	A	IAC-19.B2.8-GTS.3.9
Kutter, Bernard	A	IAC-19.D2.1.7
Kuulkers, Erik	CA	IAC-19.D5.3.3
Kuwayama, Yusuke	CA	IAC-19.E3.3.12
Kuznetsov, Eduard	A	IAC-19.A6.IP.9
Kuźma, Joanna	A	IAC-19.A1.IP.8
Kuźma, Joanna	CA	IAC-19.A1.IP.17
Kwak, Jun Young	CA	IAC-19.C2.IP.9
Kwok, Richard	CA	IAC-19.A1.4.6
Kwon, Sejin	CA	IAC-19.C4.5.10
Kwon, Sejin	CA	IAC-19.C4.5.11
Kwon, Sejin	CA	IAC-19.C4.IP.2
Kwon, Sejin	CA	IAC-19.C4.IP.14
Kwon, Sejin	CA	IAC-19.C4.IP.30
Kwong, Jeffrey	CA	IAC-19.B4.8.6
Kyathasandra Manjunath, Abhishek	CA	IAC-19.C3.3.12
Kyriakopoulos, George	A	IAC-19.E7.5.8
Kärräng, Patrik	CA	IAC-19.A6.3.10
Könemann, Thorben	A	IAC-19.A2.5.1
Kössling, Matthias	CA	IAC-19.C3.5-C4.7.12
Küchemann, Oliver	CA	IAC-19.A3.4A.6
Küchemann, Oliver	CA	IAC-19.A3.4B.8
Kündgen, Tobias	CA	IAC-19.B4.4.6
L		
L, Nipin	CA	IAC-19.C4.4.7
L, RaviKumar	CA	IAC-19.E2.1.9
La Tessa, Chiara	CA	IAC-19.A1.5.13
Labidi, Michael	CA	IAC-19.E5.1A.1
Labroquère, Jérémie	CA	IAC-19.C1.8.3
Lachmann, Maike Diana	CA	IAC-19.A2.3.6
LaCorte, Pete	CA	IAC-19.C3.4.1
Lacotte, Michel	CA	IAC-19.B6.1.8
Lacroix, Simon	CA	IAC-19.B5.2.6
Lades, Martin	A	IAC-19.D4.3.15
Laetitia, Calice	CA	IAC-19.A1.IP.7
Lafranconi, Renato	CA	IAC-19.B4.5.10
Lagadrilliere, Pierre-Alexis	CA	IAC-19.E3.1.3
Lagadrilliere, Pierre-Alexis	A	IAC-19.E5.4.7
Lagomasino, David	CA	IAC-19.B1.6.4
Lagos, David	CA	IAC-19.A4.2.7
Lai, James	CA	IAC-19.A1.4.12
Lainé, Constance	CA	IAC-19.A3.IP.21
Laird, Ryan	CA	IAC-19.E6.5-GTS.1.9
Lakmal, Yasith	A	IAC-19.B2.4.6
Lal, Bhavya	CA	IAC-19.E6.2.12
Lal, Bhavya	CA	IAC-19.C3.5-C4.7.3
Lal, Bhavya	CA	IAC-19.E3.3.5
Lal, Bhavya	A	IAC-19.E6.3.1
Lal, Bhavya	CA	IAC-19.B5.3.3
Lalla, Emmanuel	CA	IAC-19.A3.3B.12
Lam-Trong, Thien	CA	IAC-19.A7.3.5
Lama, Luca	CA	IAC-19.A6.7.9
Lama, Luca	CA	IAC-19.A6.9.9
Lamamy, Julien-Alexandre	CA	IAC-19.C2.IP.10
Lamanna, Alfonso	CA	IAC-19.E1.4.4
Lamanna, Alfonso	CA	IAC-19.A6.IP.22
Lambert, Christopher	A	IAC-19.A2.4.8
Lambert, Christopher	CA	IAC-19.A2.4.9
Lamboray, Bob	CA	IAC-19.E5.2.10
Lamboray, Bob	CA	IAC-19.D3.4.3
Lamborelle, Olivier	CA	IAC-19.B6.3.5
Lamont, Kathy	CA	IAC-19.E1.1.6
Lampani, Luca	CA	IAC-19.C2.9.8
Lan, Ding	CA	IAC-19.A2.2.4
Lancee, Jules	A	IAC-19.A1.3.9
Lancheros, Estefany	CA	IAC-19.D1.2.5
Landeros-Ayala, Salvador	CA	IAC-19.B2.1.9
Landgraf, Markus	CA	IAC-19.D4.1.2
Landis, Geoffrey	A	IAC-19.A3.5.7
Landis, Geoffrey	A	IAC-19.C3.4.8
Landis, Rob	CA	IAC-19.E5.4.4
Landreani, Federica	CA	IAC-19.A1.2.3
Landreani, Federica	CA	IAC-19.A1.IP.10
Laneve, Giovanni	CA	IAC-19.B5.1.4
Lang, Joe	CA	IAC-19.A1.4.5
Lange, Caroline	CA	IAC-19.A3.4A.6
Lange, Caroline	A	IAC-19.D1.4B.5
Lange, Caroline	CA	IAC-19.B4.8.12
Lange, Caroline	CA	IAC-19.A3.4B.2
Lange, Caroline	A	IAC-19.A3.4B.3
Lange, Caroline	CA	IAC-19.A3.4B.8
Lange, Christian	A	IAC-19.A3.1.3
Lange, Marc C	A	IAC-19.B3.IP.4
Lange, Michael	CA	IAC-19.A3.4A.6
Lange, Michael	CA	IAC-19.A3.4B.8
Langley, Christopher S.	A	IAC-19.A5.3-B3.6.3
Langlois, Lucas	CA	IAC-19.C4.6.2
Langlois, Nicolas	CA	IAC-19.C4.5.2
Langston, Sara	A	IAC-19.E3.IP.9
Langston, Sara	A	IAC-19.E7.IP.18
Lansdowne, Chatwin	CA	IAC-19.B4.6B.13
Lapointe, Julien	CA	IAC-19.E1.IP.21
LaPointe, Matt	CA	IAC-19.C3.4.1
LaPointe, Michael	A	IAC-19.D4.IP.5
Larina, Irina	CA	IAC-19.A2.7.10
Lariviere, Marcel	CA	IAC-19.B4.IP.16
LaRocca, Daniel	A	IAC-19.B4.2.4
Larouche, Benoit	A	IAC-19.B4.6A.8
Larrea Brito, Natalia	A	IAC-19.A3.1.5
Lassoudiere, Francois	CA	IAC-19.C4.4.11
LASTRI, MARCO	CA	IAC-19.B1.3.2
Lathrop, Brian	CA	IAC-19.A3.5.1
Lathrup, Brian	CA	IAC-19.A5.4-D2.8.4
Latino, Alessandro	A	IAC-19.C1.3.7
Latorella, Kara	A	IAC-19.D3.2A.6
Latyshev, Kir	CA	IAC-19.D1.2.8
Latyshev, Kir	CA	IAC-19.A1.5.10
Latyshev, Kir	CA	IAC-19.C1.6.9
Latyshev, Kir	CA	IAC-19.B4.7.4
Lau, Eunice	CA	IAC-19.A3.5.1
Lauck, Felix	CA	IAC-19.C4.9.1
Laudet, Philippe	CA	IAC-19.A3.3A.5
Lauer, Charles	A	IAC-19.E6.2.11
Lauer, Charles	A	IAC-19.D2.6.12
Lauer, Charles	A	IAC-19.D6.3.5
Laufer, Rene	CA	IAC-19.C4.IP.21
Laufer, Rene	CA	IAC-19.D2.IP.5
Laufer, Rene	CA	IAC-19.B3.7.8
Laufer, Rene	A	IAC-19.B4.8.7
Laufer, Rene	CA	IAC-19.D1.6.5
Launius, Roger D.	A	IAC-19.D2.9-D6.2.1
Laurens, Sophie	CA	IAC-19.C1.8.3
Laurenzi, Susanna	CA	IAC-19.C2.8.8
Lauretta, Dante	CA	IAC-19.A3.4A.7
Laureys, Steven	CA	IAC-19.A1.2.4
Laureys, Steven	CA	IAC-19.A1.2.5
Laurin, Jean-Jacques	CA	IAC-19.B2.3.2
Laurin, Jean-Jacques	CA	IAC-19.B2.IP.2
Laurini, Daniele	CA	IAC-19.B3.4-B6.4.5
Lavaggi, Tania	CA	IAC-19.C2.8.8
Lavagna, Michèle	CA	IAC-19.C1.2.3
Lavagna, Michèle	CA	IAC-19.C1.3.2
Lavagna, Michèle	CA	IAC-19.C1.3.4
Lavagna, Michèle	CA	IAC-19.C1.4.4
Lavagna, Michèle	CA	IAC-19.C1.5.4
Lavagna, Michèle	CA	IAC-19.A6.6.10
Lavagna, Michèle	CA	IAC-19.B4.IP.27
Lavagna, Michèle	CA	IAC-19.B4.IP.33
Lavagna, Michèle	A	IAC-19.B4.8.8
Lavagna, Michèle	CA	IAC-19.D3.2B.10
Lavrinov, Gleb	CA	IAC-19.A1.5.10
Lavrinov, Gleb	CA	IAC-19.B4.7.4

Name	Role	Paper
Lavrinov, Gleb	A	IAC-19.A2.7.12
Law, Emily	A	IAC-19.A3.IP.6
Lawdensky, Valerie	A	IAC-19.C3.5-C4.7.5
Lawson, Eamon	CA	IAC-19.E3.1.3
Lawson, Greig	CA	IAC-19.A1.1.9
Lazarev, Nikita	CA	IAC-19.E2.4.5
Lazcano Macías, Matías Cuauhtémoc	CA	IAC-19.B1.5.9
Le Blay, Carole	CA	IAC-19.A2.1.9
Le Gonidec, Serge	CA	IAC-19.C4.5.2
Le May, Samantha	CA	IAC-19.A6.10-B4.10.6
Lebofsky, Matt	A	IAC-19.A4.1.4
Lebreton, Jean-Pierre	CA	IAC-19.B4.2.13
Leclerc, Gilles	CA	IAC-19.A3.1.3
Lecoutre, Carole	CA	IAC-19.A2.2.5
Ledbetter, Frank	CA	IAC-19.D3.2B.5
Lee, Changjin	CA	IAC-19.C4.2.12
Lee, Charles	CA	IAC-19.B2.4.10
Lee, Charles	CA	IAC-19.B2.5.6
Lee, Chris	A	IAC-19.D4.2.5
Lee, Chris H.	CA	IAC-19.A6.1.4
Lee, Dae Young	CA	IAC-19.D1.2.3
Lee, Dae Young	A	IAC-19.C3.IP.1
Lee, David	CA	IAC-19.A2.5.3
Lee, Eunkwang	A	IAC-19.C4.IP.2
Lee, Hungu	CA	IAC-19.B1.2.5
Lee, Hyoungjin	CA	IAC-19.C4.IP.11
Lee, Jae-Min	A	IAC-19.D3.4.5
Lee, Jaecheong	A	IAC-19.C4.IP.11
Lee, Jungpyo	CA	IAC-19.C4.3.8
Lee, Kang	CA	IAC-19.C2.IP.15
Lee, Kerry	CA	IAC-19.A1.5.5
Lee, Kyun Ho	A	IAC-19.C4.IP.16
Lee, Mingoo	CA	IAC-19.D2.IP.12
Lee, Peter	A	IAC-19.E1.1.5
Lee, Sea-Hoon	CA	IAC-19.C4.5.11
Lee, Seung Muk	CA	IAC-19.A2.7.7
Lee, Steve	A	IAC-19.B5.3.1
Lee, Ty	A	IAC-19.D1.2.7
Lee, Woosub	CA	IAC-19.A3.2B.8
Lee, Yuseok	A	IAC-19.C4.IP.5
Lee, Yuseok	CA	IAC-19.C4.IP.11
Leenknecht, Bart	CA	IAC-19.E5.3.3
Lefeber, René	CA	IAC-19.D4.5.1
Lefebvre, Luc	CA	IAC-19.B3.1.3
Lehnert, Christopher	CA	IAC-19.E3.IP.4
Lehnhardt, Emma	A	IAC-19.E3.6.5
Lei, Fanpei	CA	IAC-19.C4.5.12
Leidner, Daniel	CA	IAC-19.A5.3-B3.6.2
Leijtens, Johan	CA	IAC-19.A3.2B.6
Leijtens, Johan	A	IAC-19.B4.9-GTS.5.11
Leiter, Hans	CA	IAC-19.A3.3A.11
Leiter, Hans	CA	IAC-19.C4.4.8
Leiter, Hans	CA	IAC-19.C4.4.11
Leiter, Hans	CA	IAC-19.A5.4-D2.8.9
Leitgab, Martin	CA	IAC-19.A1.5.5
Lemack, Carie	A	IAC-19.E1.5.6
LeMaitre, Julia	CA	IAC-19.A3.4B.8
Lemke, Norbert M.K.	A	IAC-19.B3.3.8
Lemmens, Stijn	CA	IAC-19.A6.4.4
Lemmens, Stijn	CA	IAC-19.A6.4.9
Lemmens, Stijn	CA	IAC-19.A6.8.9
Lemos, Marcelo	CA	IAC-19.A2.2.6
Lenard, Roger X.	A	IAC-19.C3.3.9
Lenard, Roger X.	A	IAC-19.D4.5.3
Lengowski, Michael	CA	IAC-19.B4.3.2
Lengowski, Michael	CA	IAC-19.D1.3.5
Lengowski, Michael	CA	IAC-19.C2.5.7
Leonardi, Claudio	CA	IAC-19.A3.IP.18
Leonov, Victor	CA	IAC-19.E1.2.10
Leonov, Victor	CA	IAC-19.C1.IP.3
Leroi, Vaitua	CA	IAC-19.C4.4.10
LEROY, Alix	A	IAC-19.B2.IP.5
Lesieutre, George	CA	IAC-19.C2.2.4
Leterre, Gabrielle	A	IAC-19.E7.1.9
Letizia, Francesca	A	IAC-19.A6.4.4

Name	Role	Paper
Letizia, Francesca	CA	IAC-19.A6.4.9
Letizia, Francesca	CA	IAC-19.A6.8.9
Letsch, Cedric	CA	IAC-19.D3.4.3
Letterio, Federico	CA	IAC-19.A6.4.6
Letterio, Federico	CA	IAC-19.A6.6.4
Leucht, Kurt	CA	IAC-19.A3.IP.11
Levack, Daniel	A	IAC-19.A5.IP.1
Levasseur, Jennifer	A	IAC-19.E5.5.1
Leventiu, Constantin	CA	IAC-19.C4.9.5
Leverone, Fiona	CA	IAC-19.E2.1.3
Leverone, Fiona	CA	IAC-19.B4.8.7
Levi, Filippo	CA	IAC-19.B2.4.2
Levin, Eugene	CA	IAC-19.A6.5.4
Levine, Joel S.	CA	IAC-19.A1.IP.14
Lewis, Hugh	A	IAC-19.A6.2.4
Lewis, Hugh	CA	IAC-19.A6.2.6
Li, Dun	A	IAC-19.C4.9.13
Li, Fei	CA	IAC-19.C2.7.1
LI, GANGQIANG	A	IAC-19.D4.3.13
Li, Ji	A	IAC-19.D3.2A.1
Li, Jianan	A	IAC-19.C4.5.12
Li, Jinglan	CA	IAC-19.B2.IP.9
Li, Jinxian	CA	IAC-19.C4.IP.6
Li, Jixin	A	IAC-19.B2.IP.10
Li, Juan	CA	IAC-19.E5.IP.10
LI, KAI	A	IAC-19.A2.2.8
Li, Mao	CA	IAC-19.C4.IP.1
Li, Mengyuan	CA	IAC-19.D2.2.6
Li, Ming	CA	IAC-19.A6.3.2
Li, Ming	CA	IAC-19.A6.3.5
Li, Ming	CA	IAC-19.A6.3.6
Li, Ming	CA	IAC-19.A6.6.5
Li, Ming	CA	IAC-19.A6.IP.4
Li, Ming	CA	IAC-19.A6.IP.5
Li, Ting	A	IAC-19.B2.3.13
Li, Wei	CA	IAC-19.B2.3.13
Li, Weibin	CA	IAC-19.A2.2.4
Li, Wen Hao	A	IAC-19.B4.6A.3
Li, Xiaofeng	A	IAC-19.B1.4.1
Li, Xiaoping	A	IAC-19.C2.1.11
Li, Xin	CA	IAC-19.A6.IP.15
Li, Yinghui	CA	IAC-19.A1.1.10
LI, Yingyu	CA	IAC-19.B2.1.8
Li, Yuanqi	A	IAC-19.C4.3.12
Li, Yuliang	CA	IAC-19.D2.2.6
LI, Yulun	A	IAC-19.B2.1.8
Li, Yuman	A	IAC-19.A2.5.11
Liang, He	CA	IAC-19.D5.IP.5
Liang, Junlong	CA	IAC-19.C4.9.7
Liang, Junlong	CA	IAC-19.C4.9.11
Liang, Qun	CA	IAC-19.C4.3.12
Liang, Qun	CA	IAC-19.C4.5.12
Liang, Qun	A	IAC-19.C4.IP.24
Liang, Qun	CA	IAC-19.C4.9.12
Liang, Qun	CA	IAC-19.C4.9.15
Liang, Xiaogeng	CA	IAC-19.B2.IP.10
Liang, Yang	CA	IAC-19.B1.IP.17
Liao, Xavier L.W.	A	IAC-19.E3.3.4
Liapi, Marianthi	CA	IAC-19.B3.8-GTS.2.6
Libessart, Martin	CA	IAC-19.C3.5-C4.7.2
Liceaga-Indart, Iker	CA	IAC-19.B4.9-GTS.5.8
Lichtenheldt, Roy	CA	IAC-19.B4.8.12
Lichtenheldt, Roy	CA	IAC-19.A3.4B.8
Lidtke, Aleksander	CA	IAC-19.B4.4.8
Lieberknecht, Erika	A	IAC-19.C2.1.2
Liebermann, Randy	A	IAC-19.E4.2.4
LIENART, Thomas	CA	IAC-19.A6.4.1
Lietaer, Benoit	CA	IAC-19.D1.3.6
Lifson, Miles	CA	IAC-19.A2.3.1
Lifson, Miles	A	IAC-19.E3.4.3
Lightsey, E. Glenn	CA	IAC-19.B2.4.10
Lightsey, E. Glenn	CA	IAC-19.B2.5.6
Lii, Neal	CA	IAC-19.A5.3-B3.6.2
Liller, Stef	CA	IAC-19.A3.5.5
Lillo, Arthur	CA	IAC-19.A2.5.4

Name	Role	Paper
Lim, Darlene	CA	IAC-19.B3.5.7
Lim, Hayoung	CA	IAC-19.C4.1.12
Lim, Jing Rong Bryan	CA	IAC-19.E7.2.10
Lim, Seongmin	A	IAC-19.A6.IP.11
Lim, Seongmin	CA	IAC-19.A6.IP.12
Lim, Yeerang	CA	IAC-19.B4.IP.2
Lima da Silva, Isomar	CA	IAC-19.D1.4A.5
Limaye, Ashutosh	CA	IAC-19.B1.6.2
Lin, Beldon	CA	IAC-19.E2.3-GTS.4.5
Lin, Hou-Yuan	A	IAC-19.A6.IP.18
Lin, Li-Ching	CA	IAC-19.B1.1.4
Lin, Mingpei	A	IAC-19.C1.3.12
Lin, Mingpei	CA	IAC-19.C1.3.13
Lin, Olivia Y.-H.	CA	IAC-19.C2.IP.16
Lin, Shin-Fa	A	IAC-19.A3.2B.3
Lin, Xiaoya	A	IAC-19.E7.IP.5
LINARES, RICHARD	CA	IAC-19.C1.8.10
LINARES, RICHARD	CA	IAC-19.C1.8.12
LINARES, RICHARD	A	IAC-19.C1.9.12
Linck, Evan	A	IAC-19.E6.2.12
Lind, Anna	CA	IAC-19.C4.10.12
Lindblad, Klas	A	IAC-19.C4.3.3
Lindblad, Louise	CA	IAC-19.D1.IP.5
Lindgren, David	CA	IAC-19.D4.2.1
Lindgren, David	CA	IAC-19.E3.1.4
Lindgren, David	CA	IAC-19.E1.9.15
Lindig, Niklas	CA	IAC-19.B3.7.2
Lindley, Craig	A	IAC-19.D4.5.16
Lindsay, Michael	CA	IAC-19.A6.2.4
Lindsay, Scott	CA	IAC-19.C2.IP.19
Ling, Keck Voon	CA	IAC-19.C1.5.5
Ling, Keck Voon	CA	IAC-19.C1.6.5
Ling, Keck Voon	CA	IAC-19.C1.8.4
Ling, William Yeong Liang	A	IAC-19.C4.4.5
Ling Euk Jin, Alexander	CA	IAC-19.B4.2.12
Ling Euk Jin, Alexander	CA	IAC-19.B2.5.7
Lingenauber, Martin	A	IAC-19.A3.4B.4
Linger, Richard	A	IAC-19.D5.4.5
Lingham, Marcus	CA	IAC-19.A6.4.8
Link, Mathias	A	IAC-19.E5.2.10
Link, Mathias	CA	IAC-19.D4.5.17
Link, Mathias	CA	IAC-19.D3.4.3
Link, Steven	CA	IAC-19.B3.5.6
Linn, Timothy	CA	IAC-19.A3.2A.3
Linn Barnett, Danna	CA	IAC-19.A5.2.13
Linn Barnett, Danna	A	IAC-19.D1.6.2
Lionnet, Pierre	CA	IAC-19.D2.7.9
Lipinska, Monika	CA	IAC-19.D4.2.8
Lipinska, Monika	A	IAC-19.E5.3.11
Lipinska, Monika	CA	IAC-19.D3.IP.3
Lisitsyna, Ksenia	A	IAC-19.E6.1.10
Lisitsyna, Ksenia	CA	IAC-19.E1.7.10
Lisitsyna, Ksenia	CA	IAC-19.A1.7.10
Lisk, Joel	A	IAC-19.E7.3.4
Lisse, Carey	CA	IAC-19.D4.4.2
List, Meike	CA	IAC-19.A2.1.6
List, Meike	CA	IAC-19.C1.IP.5
Litaker, Harry	CA	IAC-19.A5.IP.6
Litvinova, Liudmila	CA	IAC-19.A1.2.4
Litvinova, Liudmila	CA	IAC-19.A1.2.5
Liu, Ben	CA	IAC-19.C4.10.13
LIU, Chang	CA	IAC-19.E6.3.8
Liu, Changguo	CA	IAC-19.C4.10.13
Liu, Chenglan	CA	IAC-19.D4.2.8
Liu, Chenglan	A	IAC-19.B3.4-B6.4.8
Liu, Chenglan	CA	IAC-19.D3.IP.3
Liu, Hansen	CA	IAC-19.D4.4.9
LIU, Hao	CA	IAC-19.B1.2.9
Liu, Hongjun	CA	IAC-19.C4.3.12
Liu, Irina	A	IAC-19.B5.3.3
Liu, Jue	CA	IAC-19.D1.1.5
Liu, Junting	CA	IAC-19.D2.4.7
Liu, Lin	CA	IAC-19.B2.6.9
Liu, Qiu-Sheng	A	IAC-19.A2.3.2
Liu, Ruimin	CA	IAC-19.C4.IP.1

Name	Role	Paper
Liu, Ruimin	CA	IAC-19.C4.IP.7
Liu, Sen	CA	IAC-19.A6.IP.15
Liu, Wenjun	CA	IAC-19.A2.3.2
Liu, Wenpeng	A	IAC-19.D4.5.12
Liu, Xiangyang	CA	IAC-19.C4.4.5
Liu, Xin	A	IAC-19.E5.3.9
Liu, Yu	A	IAC-19.C1.9.6
Liu, Zhuowei	CA	IAC-19.B2.4.11
Livadiotti, Sabrina	A	IAC-19.C1.1.3
Livingood, Katie	A	IAC-19.E1.3.1
Lizy-Destrez, Stéphanie	CA	IAC-19.C1.1.9
Lizy-Destrez, Stéphanie	CA	IAC-19.A2.6.8
Llanos, Pedro	CA	IAC-19.B6.3.6
Llanos, Pedro	A	IAC-19.A2.7.14
Llaveria, David	CA	IAC-19.D1.2.5
Lloyd, Stephanie	CA	IAC-19.B4.9-GTS.5.8
Loarte, Sergio	CA	IAC-19.B2.5.7
Lobascio, Cesare	CA	IAC-19.A1.5.13
Lobo, Rafael	CA	IAC-19.B4.1.10
Lobo, Rafael	A	IAC-19.E1.2.7
Lobo, Rafael	CA	IAC-19.B4.IP.5
Locke, Jericho	A	IAC-19.C3.5-C4.7.3
Lockowandt, Christian	CA	IAC-19.A2.5.6
Lodi, Silver	A	IAC-19.D2.IP.14
Loeb, Avi	A	IAC-19.D4.4.8
Loehrlein, Ryan	A	IAC-19.E2.4.3
Loftus, David	CA	IAC-19.A1.7.16
Lognonné, Philippe	CA	IAC-19.A3.3A.5
Loizzo, Rosa	CA	IAC-19.B1.3.2
Loke, Victor	A	IAC-19.B1.4.2
Loktev, Sergey	CA	IAC-19.A1.8.14
Lombardi, Chiara	CA	IAC-19.B3.3.12
Lombardi, Eleonora	CA	IAC-19.E6.1.8
Lombardo, Jordan	CA	IAC-19.D2.5.4
LONDHE, PRAVIN	CA	IAC-19.E2.4.7
LONDHE, PRAVIN	CA	IAC-19.E2.4.8
Long, George Anthony	A	IAC-19.E7.3.16
Long, Jason	A	IAC-19.B6.IP.10
Long, Kelvin	CA	IAC-19.D1.1.4
Long, Nathanial	A	IAC-19.A5.4-D2.8.10
Long, Yao	CA	IAC-19.A6.IP.15
Longo, Francesco	CA	IAC-19.B1.3.2
Longo, Staten	CA	IAC-19.E1.IP.5
Longstaff, Roger	CA	IAC-19.A6.8.11
Looper, Mark	CA	IAC-19.A1.5.2
Looper, Samuel	A	IAC-19.E5.4.10
Lopac, Nicholas	CA	IAC-19.B3.IP.1
Lopac, Nicholas	CA	IAC-19.B3.8-GTS.2.5
Lopes de Oliveira e Souza, Marcelo	CA	IAC-19.D4.5.11
Lopes Marques, Ophelia	A	IAC-19.E2.1.12
Lopez, David	CA	IAC-19.E1.IP.18
Lopez, David	A	IAC-19.E5.IP.2
Lopez, Erik	CA	IAC-19.E1.6.6
Lopez, Juan	CA	IAC-19.E1.6.6
Lorda, Laurence	CA	IAC-19.A3.4A.6
Lorda, Laurence	CA	IAC-19.C1.7.3
Lorda, Laurence	CA	IAC-19.A3.4B.2
Lorda, Laurence	CA	IAC-19.A3.4B.8
Lordos, George	A	IAC-19.B3.2.12
Lordos, George	CA	IAC-19.B3.8-GTS.2.8
Lorenz, Ralph D.	CA	IAC-19.A3.3B.6
Lorenzoni, Matteo Andreas	CA	IAC-19.B4.5.8
Lori, Maurizio	CA	IAC-19.B2.3.3
Lorieau, Albane	CA	IAC-19.A5.1.3
Lorieau, Albane	CA	IAC-19.B3.7.4
Loru, Sara	CA	IAC-19.A7.2.3
Lorusso, Rino	CA	IAC-19.B1.2.11
Losacco, Matteo	CA	IAC-19.A6.7.9
Losacco, Matteo	A	IAC-19.A6.9.9
Lott, Jean-Baptiste	CA	IAC-19.B6.2.12
Loureiro, Geilson	CA	IAC-19.D1.3.8
Loureiro, Geilson	CA	IAC-19.D1.4A.5
Loureiro, Geilson	CA	IAC-19.B4.7.9
Loureiro, Geilson	CA	IAC-19.D1.4B.9
Loureiro, Geilson	CA	IAC-19.D1.5.7

Name	Role	Paper
Loureiro, Nuno	A	IAC-19.A2.3.3
Louw, Ana-Mia	A	IAC-19.E6.5-GTS.1.8
Lovagnini, Alessandro	CA	IAC-19.A5.1.9
Lovagnini, Alessandro	CA	IAC-19.A3.IP.8
Lovagnini, Alessandro	A	IAC-19.C3.4.11
Love, John	CA	IAC-19.D1.4B.3
Lovecchio, Nicola	CA	IAC-19.A2.7.6
Low, Thomas	CA	IAC-19.A5.3-B3.6.5
Lozano, Paulo	CA	IAC-19.A5.4-D2.8.3
Lu, Edward	A	IAC-19.A6.10-B4.10.1
Lu, Juan	A	IAC-19.B2.5.12
Lubieniecki, Marek	CA	IAC-19.D2.6.6
Lubin, Philip	A	IAC-19.A4.1.10
Lubin, Philip	CA	IAC-19.D4.4.7
Lubin, Philip	A	IAC-19.D4.4.12
Lubin, Philip	CA	IAC-19.A5.4-D2.8.3
Lucas-Rhimbassen, Maria	CA	IAC-19.A6.8.5
Lucas-Rhimbassen, Maria	A	IAC-19.D5.4.1
Lucente, Paolo	CA	IAC-19.E1.3.8
Lucente, Paolo	CA	IAC-19.A6.10-B4.10.2
Luchena, Daniele	CA	IAC-19.B5.1.4
Luchena, Daniele	A	IAC-19.B4.IP.29
Lucia, Massimo	CA	IAC-19.A3.3B.7
Lucken, Romain	A	IAC-19.A6.IP.14
Ludban, Debra	CA	IAC-19.B3.1.7
Luechtrath, Ludwig	CA	IAC-19.C1.IP.10
Lugo, Justin	CA	IAC-19.E1.4.5
Lugo, Rafael	CA	IAC-19.A3.3B.13
Lukasik, Artur	CA	IAC-19.B4.9-GTS.5.5
Lukasik, Artur	A	IAC-19.A6.10-B4.10.7
Lulli, Matteo	A	IAC-19.A2.7.11
Luna, Sarah	CA	IAC-19.C2.1.3
Lund, Matthew	A	IAC-19.A1.5.9
Luo, Chuan	A	IAC-19.C2.IP.5
Luo, Tong	CA	IAC-19.C1.3.12
Luo, Tong	CA	IAC-19.C1.3.13
Luo, Victor	CA	IAC-19.B3.5.7
Luo, Xuhui	CA	IAC-19.A6.2.12
Lupu, Elena Sorina	A	IAC-19.B6.3.8
Luraschi, Eleonora	CA	IAC-19.B4.5.8
Lusk, Glenna	CA	IAC-19.B1.6.10
Lutgring, Stephen	CA	IAC-19.B2.3.9
Lutkewitte, Brennan	CA	IAC-19.D1.1.4
Lutkewitte, Brennan	CA	IAC-19.E2.3-GTS.4.8
Lutomski, Mike	A	IAC-19.E6.4.5
Luzzi, Sara	CA	IAC-19.A2.7.11
Lvping, Li	CA	IAC-19.B2.6.10
Lyles, Garry	A	IAC-19.D2.1.2
Lyneham, David	CA	IAC-19.D5.4.3
Lynn, Aung	CA	IAC-19.A2.4.8
Lyons, Trevor	CA	IAC-19.A2.6.2
Lysova, Natalya	CA	IAC-19.A1.2.2
Lyu, Peng	A	IAC-19.B2.4.11
Läkk, Hanna	CA	IAC-19.D4.1.2
Lämmerzahl, Claus	A	IAC-19.A2.1.7
Lécossais, Anthony	CA	IAC-19.D3.2B.4
López, Didier	CA	IAC-19.A4.2.7
López Reyes, Guillermo	CA	IAC-19.A3.3B.11
López-Jiménez, Sergi	A	IAC-19.A6.9.3
Löw, Sebastian	CA	IAC-19.B4.3.12
Löw, Sebastian	A	IAC-19.B6.3.2
Lübke-Ossenbeck, Bernard	CA	IAC-19.C2.3.3
Lüdtke, Daniel	CA	IAC-19.D5.1.2
Lüdtke, Daniel	CA	IAC-19.D5.1.10

M

M, Sushanth	CA	IAC-19.A1.8.1
M S, Amulya	CA	IAC-19.D5.4.4
M.Sanchez, Diogo	CA	IAC-19.C1.4.6
Ma, Chengyu	CA	IAC-19.C4.8-B4.5A.10
Ma, Kenneth	A	IAC-19.B6.3.12
Ma, Lucy	CA	IAC-19.A2.1.3
Ma, Qianying	CA	IAC-19.A1.1.10
Ma, Shichao	CA	IAC-19.B1.IP.11
Ma, Shichao	CA	IAC-19.A6.9.7
Ma, Weihua	CA	IAC-19.B2.IP.10
Ma, Weihua	CA	IAC-19.B2.6.10
Ma, Zhong	CA	IAC-19.B2.IP.6
Mabee, Bethany	A	IAC-19.E3.3.12
Macau, Elbert E.N.	A	IAC-19.C1.IP.9
Maccaferri, Andrea	CA	IAC-19.A7.2.3
Maccaferri, Andrea	CA	IAC-19.A6.9.9
Maccone, Claudio	CA	IAC-19.A4.1.11
Maccone, Claudio	CA	IAC-19.A4.1.12
Maccone, Claudio	A	IAC-19.A4.1.18
Maccone, Claudio	A	IAC-19.A4.2.2
Maccone, Claudio	CA	IAC-19.A4.2.7
MacDonald, John	CA	IAC-19.A6.2.9
Macdonald, Malcolm	CA	IAC-19.B4.3.10
Machado, Miguel	CA	IAC-19.C2.IP.13
Machida, Hirotaka	CA	IAC-19.C3.2.1
Machuca, Pablo	CA	IAC-19.C1.IP.7
Machuca, Pablo	A	IAC-19.C1.7.6
Maciejowski, Jan	CA	IAC-19.C1.8.4
Mackenzie, Bruce	A	IAC-19.D3.2B.12
MacKinnon, James	A	IAC-19.D4.IP.4
Maclay, Timothy	CA	IAC-19.A6.2.4
Maclay, Timothy	A	IAC-19.A6.10-B4.10.3
Maclay, Timothy	A	IAC-19.A6.8.3
Macleod, Colin	CA	IAC-19.D6.1.3
MacMahon, David	CA	IAC-19.A4.1.2
Madatov, Artem	A	IAC-19.C4.IP.17
Madden, Erin	CA	IAC-19.E5.IP.10
Maddock, Christie	A	IAC-19.D2.IP.3
Maddock, Robert	CA	IAC-19.A3.3A.3
Madhu, Shreesha	A	IAC-19.C4.5.9
Madhugiri, Niti	A	IAC-19.A3.IP.9
Maeda, George	A	IAC-19.B4.1.19
Maeda, George	CA	IAC-19.B4.6B.6
Maeda, Keisuke	CA	IAC-19.D2.2.4
Maeda, Takenori	A	IAC-19.C4.1.4
Maekawa, Kazuhiko	CA	IAC-19.C3.2.1
Magalhães, José	CA	IAC-19.B4.6A.5
Magarotto, Mirko	CA	IAC-19.B2.1.3
Magarotto, Mirko	CA	IAC-19.C4.8-B4.5A.5
Maggi, Filippo	CA	IAC-19.A2.2.7
Maggi, Filippo	CA	IAC-19.C4.2.5
Maggi, Filippo	CA	IAC-19.A2.4.6
Maggio, Iolanda	CA	IAC-19.B1.IP.9
Magi, Alberto	CA	IAC-19.A2.7.11
Magilton, Elsbeth	A	IAC-19.E1.4.9
Magliarditi, Eric	CA	IAC-19.B4.1.21
Magliarditi, Eric	A	IAC-19.E2.3-GTS.4.5
Magnan, Nathan	CA	IAC-19.C4.6.2
Magnus, Sandra	CA	IAC-19.A3.1.6
Magro, Alessio	CA	IAC-19.A6.9.9
Magunia, Arnfried	CA	IAC-19.B6.3.1
Mahajan, Ridhima	CA	IAC-19.E2.4.1
MAHESH, V	CA	IAC-19.C4.2.3
Maheshwarappa, Mamatha	A	IAC-19.A2.IP.5
Maheshwarappa, Mamatha	CA	IAC-19.B4.6B.5
Mahfouz, Ahmed	CA	IAC-19.D1.2.8
Mahfouz, Ahmed	CA	IAC-19.C1.6.9
Mahmoud, Mahmoud Ibrahim	CA	IAC-19.B5.2.8
Mahmoudi, S. Hadi	CA	IAC-19.E7.7.5
Mahoney, Erin	CA	IAC-19.A3.1.2
Mahoney, Sean	CA	IAC-19.A3.2A.7
Maia Altafim, Rafael	CA	IAC-19.D2.IP.16
Maibaum, Michael	CA	IAC-19.A3.4A.6
Maibaum, Michael	CA	IAC-19.A3.4B.2
Maibaum, Michael	CA	IAC-19.A3.4B.8
Maier, Annika	CA	IAC-19.A5.3-B3.6.2
Maier, Mark	CA	IAC-19.B1.2.1
Maier, Maximilian	A	IAC-19.D1.6.8
Maier, Patricio	A	IAC-19.D1.3.3
Maier, Patricio	CA	IAC-19.E2.3-GTS.4.10
Mainini, Laura	CA	IAC-19.B3.7.13
Mains, Deanna	CA	IAC-19.A6.3.4
Maiolini Capez, Gabriel	CA	IAC-19.B6.1.3

Name	Role	Paper
Maisonnave, Sixtine	CA	IAC-19.A1.4.12
Maisonnave, Sixtine	CA	IAC-19.B5.3.8
Majerowicz, Erin	A	IAC-19.E1.IP.13
Majola, Fikiswa	CA	IAC-19.E3.3.8
Makadia, Rahil	CA	IAC-19.E2.3-GTS.4.6
Makarov, Nikolay	CA	IAC-19.C1.1.6
Makaya, Advenit	CA	IAC-19.D4.1.2
Makihara, Kanjuro	A	IAC-19.C2.9.9
Makino, Katsumi	CA	IAC-19.C3.2.5
Makushenko, Yury	CA	IAC-19.A5.1.5
Malde, Chintan	A	IAC-19.C2.2.10
Malekshahi, Saunon	A	IAC-19.E6.5-GTS.1.1
Malekzadeh, Ali	A	IAC-19.C2.IP.4
Malerba, Simona	CA	IAC-19.D4.IP.11
Malhotra, Vinayak	CA	IAC-19.C4.IP.29
Malhotra, Vinayak	CA	IAC-19.C4.IP.31
Malhotra, Vinayak	CA	IAC-19.D2.IP.9
Malhotra, Vinayak	A	IAC-19.D4.IP.1
Malhotra, Vinayak	A	IAC-19.D5.IP.4
Malhotra, Vinayak	CA	IAC-19.C2.8.10
Malik, Saad	A	IAC-19.B5.2.11
MALINGE, Anne-Dominique	CA	IAC-19.A1.7.13
Malinowska, Katarzyna	A	IAC-19.E6.5-GTS.1.7
Malinowski, Michael	CA	IAC-19.B6.IP.4
Malla, Ramesh	CA	IAC-19.A3.IP.2
Mallard, Thomas	A	IAC-19.A1.7.6
MALLICK, SENJUTI	A	IAC-19.A6.8.12
Mallik, Vishnuu	A	IAC-19.A6.1.8
Malloy, Samuel	CA	IAC-19.B5.2.4
Malphrus, Benjamin	A	IAC-19.B4.8.4
Malphrus, Benjamin	CA	IAC-19.B4.8.5
Maltauro, Mattia	CA	IAC-19.E1.9.13
Mamidi, Rachana Reddy	A	IAC-19.B4.IP.15
Mammone, Claudio	CA	IAC-19.C1.1.5
Manchanda, Prabhav	A	IAC-19.A7.3.9
Mancinelli, Rocco	CA	IAC-19.A1.7.7
Mandal, Sanjukta	CA	IAC-19.C4.5.9
Mandayam Bhulokam, Anagha	CA	IAC-19.A1.8.1
Mandt, Kathleen	CA	IAC-19.D4.4.1
Mandt, Kathleen	CA	IAC-19.D4.4.2
Manea, Silvio	CA	IAC-19.D1.3.8
Manea, Silvio	CA	IAC-19.D1.4B.9
Manente, Marco	CA	IAC-19.C4.8-B4.5A.5
Manfredi, Vittorio	CA	IAC-19.B3.2.5
Mangiuca, Adrian	A	IAC-19.A2.6.11
Mani, Karthik Venkatesh	A	IAC-19.B4.8.3
Mani, Vipul	A	IAC-19.A5.4-D2.8.13
Manikanta Reddy Tamanampudi, Gowtham	CA	IAC-19.C4.10.9
Mank, Zach	CA	IAC-19.A3.3B.6
Mankins, John C.	A	IAC-19.C3.1.4
Mankins, John C.	A	IAC-19.C3.1.11
Mankins, John C.	A	IAC-19.C3.1.12
Mankins, John C.	A	IAC-19.D4.2.6
Mankins, John C.	A	IAC-19.C3.2.8
Mankins, John C.	A	IAC-19.D3.1.2
Mann, Ian	CA	IAC-19.B4.6B.2
Manoli, Maria	CA	IAC-19.E7.5.8
Manrique, Miguel	A	IAC-19.C2.IP.18
Mansell, Justin	A	IAC-19.B4.3.11
Mansutti, Giulia	CA	IAC-19.B2.1.3
Mantellato, Riccardo	CA	IAC-19.C4.8-B4.5A.5
Mantilla, Juan	CA	IAC-19.C3.3.4
Manyapu, Kavya K.	A	IAC-19.B3.7.7
Manzella, David	CA	IAC-19.B3.1.7
Manzella, David	CA	IAC-19.A5.4-D2.8.2
Mao, Linquan	CA	IAC-19.D4.2.8
Mao, Linquan	CA	IAC-19.D3.IP.3
Marabottini, Cristina	CA	IAC-19.E7.IP.6
Marabucci, Manuela	CA	IAC-19.B1.2.11
Marboe, Irmgard	A	IAC-19.E7.5.2
Marburger, Jean Pierre	CA	IAC-19.A2.1.1
Marchan, Roman	CA	IAC-19.C2.4.8
Marchand, Eric	A	IAC-19.A6.6.7
Marchese, Valentina	A	IAC-19.D3.2B.10

Name	Role	Paper
Marchetti, Mario	CA	IAC-19.E2.4.6
Marchetti, Mario	CA	IAC-19.C2.6.9
Marchetti, Mario	CA	IAC-19.C2.8.2
Marchino, Lorenzo	CA	IAC-19.A5.1.9
Marchino, Lorenzo	A	IAC-19.B3.4-B6.4.10
Marchino, Lorenzo	CA	IAC-19.A1.5.8
Marchis, Franck	A	IAC-19.A7.2.1
Marcil, Isabelle	CA	IAC-19.B3.3.1
Marciniak, Blazej	CA	IAC-19.D2.6.8
Marcinkowski, Adam	CA	IAC-19.A5.1.2
Marcu, Sebastian Davis	A	IAC-19.E6.5-GTS.1.9
Marcus, Matthew	A	IAC-19.D1.4A.4
Marelli, Lorenzo	CA	IAC-19.A7.3.5
Margevich, Thomas	CA	IAC-19.C2.IP.12
Margolis, Benjamin	A	IAC-19.C1.9.1
Margulyan, Konstantin	CA	IAC-19.A5.2.13
Mariani, Alessandro	CA	IAC-19.A2.7.1
Mariani, Lorenzo	CA	IAC-19.B2.2.8
Mariez, Julien	CA	IAC-19.A6.8.1
Marigo, Gloria	CA	IAC-19.D1.3.5
Mariotti, Gilles	CA	IAC-19.B5.3.4
Mariscal, Juan Carlos	CA	IAC-19.E5.2.8
Mariscal, Juan Carlos	CA	IAC-19.D3.4.2
Markert, Amanda	CA	IAC-19.B1.6.2
Markgraf, Markus	CA	IAC-19.D2.5.3
Markov, Alexander	CA	IAC-19.B3.3.5
Marmuse, Florian	A	IAC-19.C4.6.2
Marpu, Prashanth	CA	IAC-19.E1.4.8
Marpu, Prashanth	A	IAC-19.E1.IP.29
Marquardt, Christoph	CA	IAC-19.B4.2.14
Marques, Rui	CA	IAC-19.B4.6A.5
Marques, Tiago	CA	IAC-19.E1.IP.30
Marques de Azevedo, João	A	IAC-19.E7.1.8
Marre, Samuel	CA	IAC-19.A2.2.5
Marren, Daniel	CA	IAC-19.E1.5.1
Marsalek, Karel	CA	IAC-19.A1.5.5
Martin, Gary	CA	IAC-19.E5.2.10
Martin, Gary	CA	IAC-19.E6.1.1
Martin, Gary	A	IAC-19.D4.5.17
Martin, Gary	CA	IAC-19.D3.4.3
Martin, Grégory	CA	IAC-19.D4.5.17
Martin, Jim	CA	IAC-19.B6.3.1
Martin, Johannes	CA	IAC-19.A1.7.3
Martin, Johannes	A	IAC-19.A1.8.5
Martin, Philippe	A	IAC-19.D4.IP.3
Martin, Philippe	CA	IAC-19.D1.4B.6
Martin, Scott	A	IAC-19.C4.10.15
Martin, Thierry	CA	IAC-19.C1.7.3
Martin-Yebra, Alba	CA	IAC-19.A1.2.3
Martinez, Isabel	CA	IAC-19.B6.IP.11
Martinez, Peter	CA	IAC-19.B3.7.8
Martinez, Peter	A	IAC-19.E3.4.1
Martinez, Peter	CA	IAC-19.E7.5.11
Martinez, Peter	CA	IAC-19.D1.6.5
Martinez, Peter	CA	IAC-19.E7.7.3
Martinez Rey, Noelia	CA	IAC-19.A6.4.8
Martinez Rodriguez-Osorio, Ramon	CA	IAC-19.B2.1.9
Martino, Paolo	CA	IAC-19.B4.5.8
Martino, Paolo	CA	IAC-19.A3.4A.9
Martino, Paolo	CA	IAC-19.A3.4B.5
Martinotti, Giuseppe	CA	IAC-19.B5.3.4
Martins, Cristiane	CA	IAC-19.E1.IP.8
Martins, J. Vanderlei	CA	IAC-19.B1.2.7
Marto, Simão	A	IAC-19.C1.2.1
Martucci, Adolfo	CA	IAC-19.D2.6.7
Martín, Javier	CA	IAC-19.A3.5.4
Martín-Torres, Javier	CA	IAC-19.A2.3.8
Martín-Torres, Javier	CA	IAC-19.E5.IP.6
Martín-Torres, Javier	CA	IAC-19.A1.6.1
Marwege, Ansgar	A	IAC-19.D2.4.5
Marwege, Ansgar	A	IAC-19.D2.6.2
Mary, Stephane	CA	IAC-19.A3.4B.8
Marzat, Julien	CA	IAC-19.C4.5.2
Marzialetti, Pablo	CA	IAC-19.B5.1.4
Marzioli, Paolo	CA	IAC-19.B4.1.9

Name	Role	Paper
Marzioli, Paolo	CA	IAC-19.B2.2.8
Marzioli, Paolo	A	IAC-19.E1.3.8
Marzioli, Paolo	CA	IAC-19.B2.4.7
Marzioli, Paolo	A	IAC-19.B2.4.8
Marzioli, Paolo	A	IAC-19.A6.10-B4.10.2
Marzoli, Nicholas	CA	IAC-19.B2.4.2
Marée, Hugo	CA	IAC-19.E1.2.9
Marée, Hugo	A	IAC-19.E1.3.5
Marée, Hugo	CA	IAC-19.E1.3.10
Mas, Guillaume	CA	IAC-19.A3.4B.8
Mascetti, Gabriele	CA	IAC-19.A1.2.8
Mascetti, Gabriele	CA	IAC-19.A1.3.3
Mascetti, Gabriele	CA	IAC-19.A2.6.9
Mascetti, Gabriele	CA	IAC-19.A2.6.10
Masciarelli, James	CA	IAC-19.B4.2.3
Masdemont, Josep J.	CA	IAC-19.C1.4.5
Masetti, Margaret	CA	IAC-19.E1.7.5
Mashood, Ahmed	A	IAC-19.A3.3B.3
Maslov, Victor	CA	IAC-19.C4.4.4
Maslyey, Volodymyr	CA	IAC-19.B6.2.10
Mason, James	CA	IAC-19.A6.4.8
Mason, Lee	A	IAC-19.A5.1.8
Massahi, Sonny	CA	IAC-19.E5.IP.10
Massari, Mauro	CA	IAC-19.A6.7.9
Massari, Mauro	CA	IAC-19.A6.9.9
Massobrio, Federico	A	IAC-19.A3.3A.2
MASSON, Aurore	A	IAC-19.A3.3B.9
Masson, Frederic	CA	IAC-19.A3.3A.11
Masson, Frederic	CA	IAC-19.C2.7.2
Masson, Frederic	CA	IAC-19.A5.4-D2.8.9
Masson-Zwaan, Tanja	A	IAC-19.D4.5.1
Masten, David	A	IAC-19.A3.2A.7
Mastroddi, Franco	CA	IAC-19.C2.9.8
Masui, Hirokazu	CA	IAC-19.B4.1.19
Masui, Hirokazu	CA	IAC-19.B4.6B.6
MATAKE, KOZO	CA	IAC-19.C4.3.2
Mateo, Mahaut	CA	IAC-19.A1.IP.7
Mathanlal, Thasshwin	A	IAC-19.A1.6.1
Matheson, Robert	A	IAC-19.D4.5.13
Mathews, Melvin	A	IAC-19.B2.1.13
Mathur, Monish	CA	IAC-19.C2.4.7
Mathur, Monish	A	IAC-19.D2.IP.13
Matos, Diogo	CA	IAC-19.B4.6A.5
MATSUDA, Chie	CA	IAC-19.A1.IP.2
Matsui, Takafumi	CA	IAC-19.D2.2.4
Matsumori, Barry	A	IAC-19.D5.4.11
Matsumoto, Satoshi	A	IAC-19.A2.4.1
Matsuo, Shinobu	CA	IAC-19.A5.4-D2.8.5
Matsuoka, Moe	CA	IAC-19.A3.4B.8
MATSUZAKI, Ichiyo	CA	IAC-19.A1.IP.2
Mattaghibonab, Amir	CA	IAC-19.A7.3.2
Mattana, Andrea	CA	IAC-19.A6.9.9
Matte, Andrea	CA	IAC-19.B3.1.3
Mattei, Giovanni	A	IAC-19.B2.6.4
Mattei, Giulio	CA	IAC-19.E1.3.8
Mattei, Giulio	CA	IAC-19.B2.4.7
Matthiae, Daniel	CA	IAC-19.A1.5.5
Matthias, Carsten	CA	IAC-19.B3.4-B6.4.5
MATTONE, MASSIMILIANO	CA	IAC-19.C2.3.1
Mattos, Alan	A	IAC-19.B2.3.4
Matuleviciute, Dovile	CA	IAC-19.D4.5.11
Matura, Pascal	CA	IAC-19.A6.2.1
Matusiewicz, Adam	A	IAC-19.D2.6.6
Matviyenko, Sergiy	A	IAC-19.B1.IP.6
Matyszewski, Jan	CA	IAC-19.D2.6.8
Matéo-Vélez, Jean-Charles	A	IAC-19.D5.3.8
Mauda, Shmuel	CA	IAC-19.A5.2.13
Mauldin, Kendall	A	IAC-19.B2.7.10
Maurer, Andreas	CA	IAC-19.B6.IP.2
Maurer, Andreas	CA	IAC-19.C1.IP.10
Maurer, Matthias	CA	IAC-19.A3.2C.3
Maurer, Melanie	A	IAC-19.E7.2.10
Maurice, Sylvestre	CA	IAC-19.A3.3B.11
Maurya, Shubham	A	IAC-19.C4.2.3
Maussang, Irwin	CA	IAC-19.A7.3.5

Name	Role	Paper
Mavrakis, Nikos	CA	IAC-19.C2.3.11
Mavris, Dimitri	CA	IAC-19.D2.4.10
Mavris, Dimitri	CA	IAC-19.D1.4B.1
Mavromichalaki, Helen	CA	IAC-19.A1.5.1
May, Lisa	CA	IAC-19.A5.1.2
May, Ruth	CA	IAC-19.E1.1.3
May, Ruth	A	IAC-19.E1.IP.12
Mayer, Hannes	A	IAC-19.E4.3.9
Mayer, Robert	CA	IAC-19.A1.4.15
Mayorova, Vera	A	IAC-19.E1.2.10
Mayorova, Vera	A	IAC-19.C4.6.7
Mayorova, Vera	CA	IAC-19.E1.5.12
Mayorova, Vera	A	IAC-19.E2.4.5
Mayorova, Vera	CA	IAC-19.A6.6.1
Mayorova, Vera	A	IAC-19.B4.IP.9
Mazumdar, Pratyay	A	IAC-19.C3.3.6
Mazzotta, Gwen	CA	IAC-19.E6.2.2
Mazzotta Epifani, Elena	CA	IAC-19.B4.8.8
Małkowski, Sławomir	CA	IAC-19.C3.5-C4.7.8
McAdams, James	CA	IAC-19.C1.2.11
McArdle, Anne	CA	IAC-19.A1.8.10
McArdle, Chris	CA	IAC-19.A1.8.10
McBarron, Kelsey	A	IAC-19.B4.5.2
McBrayer, Katherine	A	IAC-19.D1.4B.1
McBreen, Sheila	CA	IAC-19.E1.4.6
McBreen, Sheila	CA	IAC-19.C1.IP.16
McBride, Brent	A	IAC-19.B1.2.7
McCaa, Thomas	CA	IAC-19.B4.8.6
McCormack, Craig	CA	IAC-19.D1.1.9
McCormack, Craig	A	IAC-19.E5.1A.11
McCune, E.W.	CA	IAC-19.B4.7.12
McCune, E.W.	CA	IAC-19.B2.7.5
McCurdy, David R.	CA	IAC-19.D3.2B.7
McDonald, Iain	CA	IAC-19.D5.2.7
McDowell, Jonathan	A	IAC-19.E7.4.3
McDowell, Jonathan	CA	IAC-19.D4.IP.7
McDowell, Jonathan	A	IAC-19.E7.IP.3
McElroy, Mark	A	IAC-19.C2.1.3
McEniry, Shawn	CA	IAC-19.B3.1.8
McGhee, Nicholas	A	IAC-19.E5.1A.10
McGinn, Nature	CA	IAC-19.A1.4.3
McGinnis, Andrew	CA	IAC-19.B4.9-GTS.5.8
McGrath, Ciara	A	IAC-19.B4.3.10
McGrath, Matthew	A	IAC-19.D1.1.5
McGregor, Carolyn P	CA	IAC-19.A1.3.5
McGregor AM, Carolyn	CA	IAC-19.A1.4.2
McGuire, Jill	CA	IAC-19.D1.6.1
McGuire, Melissa	CA	IAC-19.B3.1.7
McInnes, Colin R.	CA	IAC-19.B4.8.12
McIntyre, Creighton	CA	IAC-19.E1.1.3
McJobUjah, Enyinnaya Chibuzo	CA	IAC-19.E2.3-GTS.4.7
McKee, Rachael	CA	IAC-19.A5.1.2
Mckellar, Marshall	CA	IAC-19.E7.1.5
McKenzie, David	CA	IAC-19.C4.IP.9
McKeown, David	CA	IAC-19.C1.IP.16
McKinnell, Lee-Anne	CA	IAC-19.D5.3.2
McKnight, Darren	A	IAC-19.A6.2.9
McKnight, Darren	CA	IAC-19.A6.3.8
McKnight, Darren	CA	IAC-19.A6.8.3
McMahon, Jay	CA	IAC-19.C1.2.2
McMahon, Jay	CA	IAC-19.A3.4A.7
McNeil, Ian	CA	IAC-19.B4.9-GTS.5.8
McNeil, Sean	A	IAC-19.B4.IP.19
McNutt, Ralph	CA	IAC-19.B4.2.2
McNutt, Jr., Ralph L.	A	IAC-19.D4.4.1
McNutt, Jr., Ralph L.	CA	IAC-19.D4.4.2
McNutt, Jr., Ralph L.	CA	IAC-19.D4.4.4
McPhee, Jancy	A	IAC-19.E1.IP.1
McVey, John	CA	IAC-19.A6.4.7
Means, Laura	CA	IAC-19.B3.1.8
Medanić, Mirta	CA	IAC-19.E1.IP.4
Medina Tanco, Gustavo	A	IAC-19.A3.2A.8
Medina Tanco, Gustavo	CA	IAC-19.B1.3.11
Mehoke, Douglas	CA	IAC-19.C2.IP.11
Mehoke, Douglas	CA	IAC-19.D1.5.3

Name	Role	Paper
Mehri Dehnavi, Marzieh	A	IAC-19.B2.3.2
Meinel, Michael	CA	IAC-19.A6.IP.21
Meini, Marco	CA	IAC-19.B1.3.2
Meisel, Abigail	CA	IAC-19.E2.3-GTS.4.1
Mejia-Kaiser, Martha	A	IAC-19.E7.7.2
Mejuto, Javier	CA	IAC-19.B4.1.13
Melega, Nicola	CA	IAC-19.B5.3.4
Melendres Claros, Pablo	CA	IAC-19.D4.2.8
Melendres Claros, Pablo	CA	IAC-19.D3.IP.3
Melis, Andrea	A	IAC-19.A4.1.7
Melis, Andrea	CA	IAC-19.A4.1.11
Melis, Andrea	CA	IAC-19.A7.2.3
Melis, Andrea	CA	IAC-19.A6.IP.7
Melli, Davide	A	IAC-19.B6.2.11
Mellish, Rochelle	A	IAC-19.B2.4.9
Mellish, Rochelle	A	IAC-19.D3.2A.11
Melnikova, Valeriia	CA	IAC-19.C4.6.7
Melnikova, Valeriia	CA	IAC-19.E2.4.5
Mendez Ramos, Eugina	CA	IAC-19.D2.4.10
Mendoza-Barcenas, Mario Alberto	CA	IAC-19.C2.8.6
Menekay, Serdar	CA	IAC-19.E1.7.7
Mengu, Cho	CA	IAC-19.B4.1.19
Mengu, Cho	CA	IAC-19.B4.1.20
Mengu, Cho	CA	IAC-19.B4.6B.6
Menicucci, Alessandra	CA	IAC-19.C2.6.11
Menshenin, Yaroslav	A	IAC-19.D1.2.8
Menting, Esmée	CA	IAC-19.D2.3.3
Menzies, Alexander	CA	IAC-19.B3.5.7
Merancy, Nujoud	A	IAC-19.B3.1.9
Meraner, Andrea	A	IAC-19.A6.1.3
Mercado, Nancy	CA	IAC-19.A1.3.10
Merino, Mario	CA	IAC-19.E1.3.12
Merrel, Benjamin	A	IAC-19.D3.2A.9
Merrill, Raymond	CA	IAC-19.A5.4-D2.8.8
Meskoob, Behnoosh	CA	IAC-19.A1.5.10
Meskoob, Behnoosh	A	IAC-19.B4.7.4
Messerotti, Mauro	CA	IAC-19.A7.2.3
Messidoro, Piero	CA	IAC-19.E6.2.8
Messina, Maria	CA	IAC-19.E1.4.4
Messina, Maria	A	IAC-19.A6.IP.22
Messina, Piero	CA	IAC-19.D4.1.2
Messina, Piero	CA	IAC-19.B5.2.5
Metrocavage, Kevin	A	IAC-19.B3.4-B6.4.12
Metwally, Abdelrahman	A	IAC-19.E2.1.7
Metzger, Philip	CA	IAC-19.A3.1.6
Metzger, Philip	CA	IAC-19.B6.2.9
Metzger, Philip	CA	IAC-19.D3.2A.2
Metzger, Stefan	CA	IAC-19.B4.4.6
Meus, Sergey	CA	IAC-19.C1.5.9
Meyer, Annaliese	A	IAC-19.A1.6.13
Meyer, Annaliese	CA	IAC-19.A1.8.4
Meyer, Caitlin	CA	IAC-19.A1.7.1
Meyer, Marit	A	IAC-19.A1.6.5
Meyer, Marit	CA	IAC-19.A1.8.3
Meyer, Sebastian	CA	IAC-19.D2.3.2
Meyyappan, Meyya	CA	IAC-19.D3.2B.5
Mhatre, Pradnesh	CA	IAC-19.A1.8.7
Mhatre, Pranjal	CA	IAC-19.A1.8.7
Miao, Nan	A	IAC-19.C1.IP.8
Micalizio, Salvatore	CA	IAC-19.B2.4.2
Michael, Haggard	CA	IAC-19.A3.3A.9
Michael, Joanne	CA	IAC-19.E1.1.6
Michalka, Jakub	A	IAC-19.C2.7.5
Michaud, Eric	A	IAC-19.A4.1.16
Michel, Patrick	CA	IAC-19.A3.4A.9
Michel, Patrick	A	IAC-19.A3.4B.5
Michel, Patrick	CA	IAC-19.A3.4B.8
Michel, Sylvain	CA	IAC-19.A6.8.1
Michielsen, Bastiaan	CA	IAC-19.D2.IP.6
Michikami, Tatsuhiro	CA	IAC-19.C1.2.4
Mickiewicz, Maciej	CA	IAC-19.E3.3.10
Midtun, Ina Rokne	CA	IAC-19.A1.1.4
Mierheim, Olaf	CA	IAC-19.A3.4B.8
Mierkiewicz, Edwarnd	CA	IAC-19.B4.2.2
Migeotte, Pierre-François	CA	IAC-19.A1.IP.10

Name	Role	Paper
Miglioretti, Federico	CA	IAC-19.B4.2.8
Miguel Banos, Narcis	CA	IAC-19.A6.6.4
Mihalache, Nicolae	CA	IAC-19.B6.3.11
Mihara, Shoichiro	A	IAC-19.C3.2.1
Mihara, Yorichika	A	IAC-19.D2.1.4
Mihir, Patel	CA	IAC-19.B6.3.12
Mihir, Patel	CA	IAC-19.B2.7.11
Mihm, Moritz	A	IAC-19.A2.1.1
Mikkola, Juuso	CA	IAC-19.B4.8.7
Mikrin, Evgeny	CA	IAC-19.A5.1.5
Mikschl, Tobias	CA	IAC-19.B4.8.12
Mikulz, Eugen	CA	IAC-19.B4.8.12
Miles, Corey	A	IAC-19.A6.5.5
Miles, David	CA	IAC-19.B4.6B.2
Milian, Oriol	CA	IAC-19.B4.6B.3
Millard, Douglas	A	IAC-19.E4.1.2
Miller, Anatoli	CA	IAC-19.D2.3.2
Miller, Jonathan	CA	IAC-19.E2.3-GTS.4.5
Miller, Katie	A	IAC-19.D2.1.10
Miller, Katie	A	IAC-19.B4.9-GTS.5.7
Miller, Kristen	A	IAC-19.E1.3.11
Miller, Kyle	CA	IAC-19.B2.3.9
Miller, Ronald	CA	IAC-19.B6.3.12
Miller, Viva	A	IAC-19.E4.2.7
Millinger, Mark	CA	IAC-19.A6.3.10
Mills, Gary	CA	IAC-19.D2.5.9
Millwood, Scott	A	IAC-19.D5.4.10
Milord, Lauren	CA	IAC-19.E1.5.6
Milstein, Oren	CA	IAC-19.A1.5.5
Milton, Julia	CA	IAC-19.B3.5.6
Milyayev, Konstantin	CA	IAC-19.D2.2.11
Milza, Fabiana	CA	IAC-19.C2.8.8
Mimasu, Yuya	CA	IAC-19.C1.2.4
Mimasu, Yuya	CA	IAC-19.A3.4A.3
Mimasu, Yuya	CA	IAC-19.A3.4A.5
Mimasu, Yuya	CA	IAC-19.A3.4A.6
Mimasu, Yuya	CA	IAC-19.C1.IP.11
Mimasu, Yuya	CA	IAC-19.C1.7.1
Mimasu, Yuya	CA	IAC-19.C1.7.2
Mimasu, Yuya	A	IAC-19.C1.7.3
Mingireanu, Florin	A	IAC-19.D2.6.10
Minisci, Edmondo	CA	IAC-19.A6.IP.20
Minisci, Edmondo	CA	IAC-19.B4.IP.20
Minow, Joseph	A	IAC-19.D5.3.5
Mintus, Agata	A	IAC-19.E5.2.11
Mirahmetoglu, Halit	A	IAC-19.E1.7.7
Miranda, David	A	IAC-19.D3.4.6
Mirasoli, Mara	CA	IAC-19.A1.6.6
Mirra, Carlo	CA	IAC-19.B3.4-B6.4.5
Mis, Tomasz	CA	IAC-19.A3.IP.16
Mishra, Rashi	A	IAC-19.B2.5.4
Misra, Arun	CA	IAC-19.C2.2.5
Misra, Arun	CA	IAC-19.C1.3.6
Misra, Arun	CA	IAC-19.D4.3.9
Mitchell, Grant	CA	IAC-19.B4.9-GTS.5.8
Mitchell, Isaac	CA	IAC-19.A5.1.9
Mitchell, Isaac	CA	IAC-19.D4.5.5
Mitchell, Jason	CA	IAC-19.B3.4-B6.4.2
Mithagri, Bhakti	CA	IAC-19.A1.8.7
Mithra, Angéla	CA	IAC-19.B6.1.8
Mitra, Anish	CA	IAC-19.C3.3.12
Mitsunaka, Wataru	CA	IAC-19.C2.1.5
Mittler, Petra	CA	IAC-19.B3.4-B6.4.9
Mittler, Petra	CA	IAC-19.A3.2C.3
Miura, Amane	A	IAC-19.B2.2.2
Miyamoto, Hirdy	CA	IAC-19.A3.4B.8
Miyamoto, Yuya	A	IAC-19.C2.2.7
Miyata, Kikuko	A	IAC-19.E1.4.10
Miyazaki, Shunsuke	A	IAC-19.B3.2.7
Miyazaki, Shunsuke	A	IAC-19.E5.1B.1
Miyazaki, Yasuyuki	CA	IAC-19.C2.2.9
Miyoshi, Takanori	CA	IAC-19.B1.4.5
Mizuno, Hiroyasu	CA	IAC-19.A3.2A.6
Moccia, Antonio	CA	IAC-19.B4.7.8
Mochizuki, Kazunori	A	IAC-19.D2.4.3

Name	Role	Paper
Modi, Hemil	CA	IAC-19.A5.1.7
Moeckel, Marek	CA	IAC-19.A6.9.8
Moeller, Dietmar	CA	IAC-19.B6.IP.6
Moeller, Ralf	CA	IAC-19.A1.6.10
Moeller, Ralf	CA	IAC-19.A2.7.9
Moffa, Donald	CA	IAC-19.E2.3-GTS.4.1
Moffitt, Jimmy	A	IAC-19.D2.2.2
Moghimi Esfandabadi, Mahsa	A	IAC-19.B3.8-GTS.2.3
Moghimi Esfandabadi, Mahsa	A	IAC-19.E5.1B.5
Mohammad, Baker	CA	IAC-19.C2.6.8
Mohammad, Mirkhalaf	CA	IAC-19.C2.8.1
Mohan, Shyam	CA	IAC-19.C1.7.10
Mohanty, Joshit	CA	IAC-19.E6.3.2
Mohanty, Susmita	CA	IAC-19.B1.5.6
Mohd Fadzil, Farah Hanum	A	IAC-19.E1.IP.16
Moiseev, Nikolay	CA	IAC-19.B3.7.11
Molas-Roca, Pau	A	IAC-19.E2.2.1
Molas-Roca, Pau	CA	IAC-19.C4.8-B4.5A.12
Moleiro, Filipa	CA	IAC-19.C2.IP.13
Moleti, Arturo	A	IAC-19.A1.2.8
MOLINA, Marco	CA	IAC-19.A7.1.6
MOLINA, Marco	CA	IAC-19.A3.3B.7
MOLINA, Marco	CA	IAC-19.B2.4.2
Molina, Maria	CA	IAC-19.B5.1.8
Molina, Maria	A	IAC-19.B4.1.13
Moll, Florian	CA	IAC-19.B4.2.14
Molle, Andrea	A	IAC-19.E1.6.4
Mollicone, Mauro	CA	IAC-19.E2.4.6
Molthan, Andrew	A	IAC-19.E5.4.11
Monaci, Fabio	CA	IAC-19.A6.7.9
Monaci, Fabio	CA	IAC-19.A6.9.9
Monaco, Federico	A	IAC-19.D5.2.5
Monakhova, Uliana	CA	IAC-19.B4.IP.21
Mondello, Giuseppe	CA	IAC-19.B1.3.2
Monette, Maxime	CA	IAC-19.C3.5-C4.7.12
Monge, Luis	CA	IAC-19.B5.1.8
Monge, Luis	CA	IAC-19.B4.1.13
Monge, Luis	CA	IAC-19.E6.5-GTS.1.1
Monham, Andrew	A	IAC-19.D5.3.4
Monici, Monica	CA	IAC-19.A2.7.11
Monsky, Anneke	A	IAC-19.A7.3.3
Montag, Christoph	CA	IAC-19.B4.IP.12
Montage, Anton	CA	IAC-19.A7.3.11
Montagnon, Elsa	CA	IAC-19.A3.5.2
Montebugnoli, Stelio	CA	IAC-19.A4.2.7
Monteiro, Michael	CA	IAC-19.A1.6.4
Monteith, Wayne	A	IAC-19.D6.1.2
Montenegro, Sergio	CA	IAC-19.E1.4.2
Montenegro, Sergio	CA	IAC-19.B4.8.12
Montero Montoya, Raquel Thamara	CA	IAC-19.B5.1.8
Montero-Ureña, José David	CA	IAC-19.E1.3.4
Montero-Ureña, José David	CA	IAC-19.E1.5.9
Montes, Jeffrey	A	IAC-19.E5.1A.9
MONTET, Marie-Pierre	CA	IAC-19.A1.7.13
Monteverde, Frederic	CA	IAC-19.C2.4.4
Montoro, Manuel	CA	IAC-19.B6.3.12
Montoya, Laurent	CA	IAC-19.B5.2.3
Moon, Tae-seok	CA	IAC-19.D3.4.5
Moon, Yoonwan	CA	IAC-19.C2.IP.9
Moore, Elisabeth	CA	IAC-19.B3.7.3
Moore, Iain	CA	IAC-19.B4.8.12
Moore, Tyler M.	CA	IAC-19.A1.1.2
Moorhouse, Alan	CA	IAC-19.B2.5.2
Moquin, Ty	CA	IAC-19.A2.4.8
Mora, Jose	CA	IAC-19.A1.4.12
Moraguez, Matthew	CA	IAC-19.B3.2.12
Moraguez, Matthew	CA	IAC-19.E2.3-GTS.4.5
Moraguez, Matthew	A	IAC-19.C2.7.12
Moraguez, Matthew	A	IAC-19.B3.8-GTS.2.8
Moral, Andoni G.	A	IAC-19.A3.3B.11
Moral, Andoni G.	CA	IAC-19.A3.4B.9
Morand, Vincent	CA	IAC-19.A6.9.5
Morando, Giulia	CA	IAC-19.E1.IP.20
Morawitz, Bastian	A	IAC-19.B2.8-GTS.3.5
Morbiducci, Umberto	CA	IAC-19.A2.6.8

Name	Role	Paper
Moreira, Marcos	CA	IAC-19.C2.9.3
Moreira, Mariana	A	IAC-19.C2.IP.13
Morel de Westgaver, Eric	A	IAC-19.E3.6.1
Morelli, Gianmarco	CA	IAC-19.B4.6B.4
Moreno, Melissa	CA	IAC-19.B2.7.11
Moreno-Ibáñez, Manuel	A	IAC-19.B4.6B.10
Morgese, Marco	CA	IAC-19.C2.3.1
Mori, Osamu	CA	IAC-19.C1.5.3
Mori, Osamu	CA	IAC-19.C2.7.8
Mori, Takuma	A	IAC-19.D2.2.4
MORIAI, HIDEKI	CA	IAC-19.C4.10.11
Moriani, Marco	CA	IAC-19.B4.IP.29
Moriceau, Julien	CA	IAC-19.C3.5-C4.7.2
Morikawa, Eihisa	CA	IAC-19.B2.2.2
Morillo, Pablo	CA	IAC-19.C2.5.2
Morimoto, Hitoshi	CA	IAC-19.A3.2A.6
Moriya, Shinichi	CA	IAC-19.C4.1.7
Morota, Tomokatsu	CA	IAC-19.C1.2.4
Moroz, Michal	CA	IAC-19.E6.2.3
Moroz, Michal	CA	IAC-19.E3.3.10
Morozov, Yegor	A	IAC-19.D4.IP.12
Morozova, Elina	A	IAC-19.E7.2.2
Morris, Michael	CA	IAC-19.A5.3-B3.6.9
Morris-Paterson, Tessa	A	IAC-19.A1.2.12
Morrison, Christopher	A	IAC-19.C3.5-C4.7.7
Morrison, Ian	CA	IAC-19.A4.1.2
Morse, Zach	CA	IAC-19.A3.2C.7
Morsillo, Francesco	CA	IAC-19.B5.3.4
Mortari, Daniele	CA	IAC-19.C1.8.10
Moruzzi, Michael	CA	IAC-19.C4.3.6
Moruzzi, Michael	CA	IAC-19.C4.5.6
Morzhukhina, Alena V.	CA	IAC-19.C2.7.6
Morzhukhina, Alena V.	CA	IAC-19.C2.8.2
Morón Montesdeoca, Daniel	CA	IAC-19.C2.IP.7
Moseman, Travis	CA	IAC-19.E5.1A.2
Moseman, Travis	CA	IAC-19.B3.7.5
Moser, Joshua	A	IAC-19.A5.3-B3.6.6
Moses, Robert	CA	IAC-19.D1.3.9
Moses, Robert	CA	IAC-19.D3.2A.10
Moses, Robert	CA	IAC-19.D3.2B.9
Mosher, Todd	A	IAC-19.D4.2.12
Mosher, Todd	CA	IAC-19.B4.8.6
Mosin, Vasilii	A	IAC-19.B5.2.10
Moskalov, Sergii	CA	IAC-19.B6.2.10
Mostert, Sias	A	IAC-19.E5.2.5
Mota, Fatima	A	IAC-19.A2.6.2
Mota, Fábio	CA	IAC-19.D2.IP.16
Motiwala, Idris	CA	IAC-19.E1.IP.2
Motroniuk, Iurii	CA	IAC-19.B4.7.9
Mottinger, Neil	CA	IAC-19.A3.5.1
Mould, Toby	CA	IAC-19.A2.5.10
Moura, Augusto	CA	IAC-19.C3.4.2
Moury, Monique	CA	IAC-19.A6.8.1
Mousel, Joseph	A	IAC-19.D3.4.3
Moussi, Aurélie	CA	IAC-19.A3.4A.6
Moussi, Aurélie	CA	IAC-19.A3.4B.8
MoussiSoffys, Aurelie	CA	IAC-19.A3.4B.2
Mu, Ruinan	A	IAC-19.C2.3.12
Muckelt, Paul	CA	IAC-19.A1.4.14
Mudau, Naledzani	A	IAC-19.B1.6.8
Mueanpetch, Paitoon	CA	IAC-19.A2.3.11
Mueller, Ilja	CA	IAC-19.D1.3.5
Mueller, Ilja	A	IAC-19.C2.4.10
Mueller, Juergen	CA	IAC-19.A3.5.5
Mueller, Robert	A	IAC-19.E5.1A.8
Mueller, Thomas	A	IAC-19.B3.4-B6.4.9
Mugellesi-Dow, Roberta	A	IAC-19.D5.2.2
Mugellesi-Dow, Roberta	A	IAC-19.B5.2.5
Muhire, Desire	CA	IAC-19.B1.1.11
Muhire, Desire	CA	IAC-19.E3.IP.2
Muhire, Desire	CA	IAC-19.B5.3.8
Muirhead, Brian	A	IAC-19.A3.3A.1
Mukai, Chiaki	CA	IAC-19.E1.3.7
Mukherjee, Rudranarayan	A	IAC-19.A7.1.5
Mulavara, A.P.	CA	IAC-19.A1.4.10

Name	Role	Paper
Mulder, Sebastian	CA	IAC-19.E1.IP.34
Mulder, Sebastian	CA	IAC-19.A3.2C.9
Mullin, Nikolay	A	IAC-19.C2.1.4
Mullin, Nikolay	A	IAC-19.C2.5.8
Munemasa, Yasushi	CA	IAC-19.B2.2.2
MUNEMASA, Yasushi	A	IAC-19.B2.2.3
Mungiguerra, Stefano	CA	IAC-19.C4.5.7
Mungiguerra, Stefano	A	IAC-19.C2.4.4
Mungiguerra, Stefano	CA	IAC-19.D2.6.7
Muniyappa, Prathima	A	IAC-19.E1.9.1
Munk, Michelle	CA	IAC-19.A3.2B.2
Munk, Michelle	A	IAC-19.D3.2B.3
Munoz-Martin, Joan Francesc	CA	IAC-19.B4.6B.3
Munters, Ward	A	IAC-19.E7.7.1
Muntoni, Giacomo	CA	IAC-19.A6.IP.7
Murakami, David	CA	IAC-19.B6.2.5
Murakami, Taichi	CA	IAC-19.C2.2.9
Murari, Gustavo	CA	IAC-19.C4.IP.20
Murbach, Marcus	A	IAC-19.B4.6A.9
Murdoch, Naomi	CA	IAC-19.A3.4B.5
Murdoch, Spencer	CA	IAC-19.E2.3-GTS.4.6
Murfett, Anthony	A	IAC-19.E5.IP.7
Muri, Paul	A	IAC-19.B3.4-B6.4.3
Murkewar, Onkar	CA	IAC-19.E2.3-GTS.4.4
Murnane, Austin	A	IAC-19.E7.2.8
Murnane, Austin	A	IAC-19.D4.5.10
Murphy, David	A	IAC-19.E1.4.6
Murphy, David	CA	IAC-19.C1.IP.16
Murray, Herbert	A	IAC-19.C3.2.11
Murray, Neil	CA	IAC-19.A3.2C.6
Murray-Krezan, Jeremy J.	CA	IAC-19.A6.1.4
Murrow, David	CA	IAC-19.A3.2A.3
Murrow, David	A	IAC-19.A3.3A.9
Murrow, David	CA	IAC-19.A1.5.5
Murrow, David	CA	IAC-19.B4.8.6
Murtas, Giulia	CA	IAC-19.A7.2.3
Murtazin, Rafail	A	IAC-19.B3.4-B6.4.1
Murthi, K.R. Sridhara	CA	IAC-19.B1.5.5
Murthi K. R., Sridhara	A	IAC-19.E7.3.10
Murugathasan, Latheepan	CA	IAC-19.B4.3.6
Murushkin, Mikhail	CA	IAC-19.B4.IP.36
Musetti, Bruno	A	IAC-19.A3.3A.7
Musilova, Michaela	CA	IAC-19.E1.IP.34
Musilova, Michaela	CA	IAC-19.E5.IP.5
Musilova, Michaela	CA	IAC-19.A3.2C.9
Musmeci, Mario	CA	IAC-19.B2.6.2
Musso, Ivano	CA	IAC-19.B3.5.5
Musso, Paolo	A	IAC-19.A4.2.7
Musso, Paolo	CA	IAC-19.A4.2.7
Mustafi, Shuvo	CA	IAC-19.D1.6.1
Muszynski, Michel	CA	IAC-19.C4.4.11
Muthukumaran, C K	CA	IAC-19.C4.4.7
Muzi, Danilo	A	IAC-19.B1.2.2
Muñoz, Gisela	CA	IAC-19.B3.5.3
Mwangi, Charles	CA	IAC-19.B4.1.9
Mwaniki, Charles	CA	IAC-19.E1.4.4
Mwita, Peter	CA	IAC-19.E1.4.4
Mykhalchyshyn, Roman	A	IAC-19.D2.IP.8
Málek, Michal	A	IAC-19.E2.1.10
Mélac, Laurence	CA	IAC-19.A3.4B.8
Métrailler, Lionel	A	IAC-19.D5.3.3
Müller, Kay	A	IAC-19.B4.3.12
Müller, Kay	CA	IAC-19.B6.3.2
Müller, Moritz	CA	IAC-19.B4.IP.15
Müntinga, Hauke	A	IAC-19.A2.5.7

N

Nada, Yuichiro	A	IAC-19.C1.3.9
Nader, Jules	CA	IAC-19.B2.1.2
Nader, Ronnie	A	IAC-19.B2.1.2
Nadziejko, Aleksandra	CA	IAC-19.B4.6A.5
Nag, Sreeja	A	IAC-19.B6.2.5
Nagano, Kenji	CA	IAC-19.C3.2.1
Nagao, Naoki	CA	IAC-19.C4.1.11
Nagaoka, Nobuaki	CA	IAC-19.A6.2.10
Nagase, Ryo	CA	IAC-19.C4.IP.34
Nagata, Harunori	CA	IAC-19.C4.8-B4.5A.12
Nagihara, Seiichi	CA	IAC-19.A3.3B.6
Nagihara, Seiichi	CA	IAC-19.A3.5.5
Naik, Kunal	CA	IAC-19.B3.IP.5
Naik, Siddhesh	A	IAC-19.B2.8-GTS.3.2
Naik, Siddhesh	A	IAC-19.A3.3B.2
Naik, Siddhesh	A	IAC-19.B4.IP.1
Naimipour, Naveed	A	IAC-19.B2.1.10
Naimipour, Naveed	A	IAC-19.B2.2.5
Naimipour, Naveed	CA	IAC-19.B2.7.11
Nair, Shabarinath	CA	IAC-19.B1.5.6
Naito, Hitoshi	CA	IAC-19.C4.1.11
Naja, Geraldine	A	IAC-19.E3.6.2
Naji, Mohammed	CA	IAC-19.E1.4.8
Najman, Liz	A	IAC-19.B1.IP.15
NAKAHARA, Takeshi	CA	IAC-19.C2.9.9
Nakahodo, Sidney	A	IAC-19.E6.4.9
Nakajima, Kenji	CA	IAC-19.D4.3.10
Nakajima, Yu	CA	IAC-19.C1.6.6
Nakamura, Junya	CA	IAC-19.B4.6B.14
Nakamura, Reiji	CA	IAC-19.C1.5.6
Nakamura, Shuji	CA	IAC-19.C3.2.1
Nakamura, Takahiro	CA	IAC-19.D2.4.3
Nakamura, Takahiro	CA	IAC-19.D2.6.4
Nakamura, Takeru	CA	IAC-19.C2.2.9
Nakamura, Tomoki	CA	IAC-19.A3.4B.8
Nakanishi, Hiroki	CA	IAC-19.B4.6B.14
Nakano, Shizuka	CA	IAC-19.C2.5.5
Nakarada Pecujlic, Anja	CA	IAC-19.E7.3.5
Nakasuka, Shinichi	CA	IAC-19.D1.4A.1
Nakata, Daisuke	CA	IAC-19.C4.IP.15
Nakatsuka, Yuki	CA	IAC-19.B4.6B.14
Nakazawa, Satoru	CA	IAC-19.A3.4A.2
Nalawade, Madhur	CA	IAC-19.E2.3-GTS.4.4
Naldi, Giovanni	CA	IAC-19.A6.9.9
Nalewaj, Jakub	A	IAC-19.C3.5-C4.7.8
Nallapu, Ravi	CA	IAC-19.A2.5.2
Nallapu, Ravi	A	IAC-19.B4.7.11
Nambiar, Shrrirup	CA	IAC-19.A5.1.9
Nambiar, Shrrirup	CA	IAC-19.A1.5.8
Namiranian, Siavash	CA	IAC-19.A2.4.9
Nangle, Shannon	CA	IAC-19.A1.IP.13
Nanjangud, Angadh	A	IAC-19.D1.6.6
Nanni, Francesca	CA	IAC-19.C2.5.6
Nannucci, Ottavio	CA	IAC-19.B1.3.2
Napier, Lauren	A	IAC-19.E3.1.10
Napolitano, Ermanno	A	IAC-19.E7.5.12
Narayanamoorthi, Ashok	CA	IAC-19.A1.4.1
Narayanan, Sriram	CA	IAC-19.B4.IP.16
Narayanasetti, Venkata Vighnesam	A	IAC-19.B2.6.6
Narici, Livio	A	IAC-19.A1.5.12
Narici, Livio	A	IAC-19.A1.5.13
Narkiewicz, Janusz	CA	IAC-19.D1.2.5
Nascetti, Augusto	CA	IAC-19.C1.5.11
Nascetti, Augusto	A	IAC-19.A1.6.6
Nascetti, Augusto	CA	IAC-19.A2.7.6
Nasr, Maya	A	IAC-19.A3.3B.10
Nasrini, Jad	CA	IAC-19.A1.1.2
Nassey, Charlotte	CA	IAC-19.D4.2.8
Nassey, Charlotte	A	IAC-19.D3.1.3
Nassey, Charlotte	CA	IAC-19.D3.IP.3
Nassisi, Annamaria	A	IAC-19.B1.2.8
Nassisi, Annamaria	CA	IAC-19.E1.5.2
Nassisi, Annamaria	A	IAC-19.B4.7.3
Nastasi, Nick	CA	IAC-19.A1.8.3
Nath, Pranav	A	IAC-19.C4.4.7
Navalón, Moisés	CA	IAC-19.C3.3.5
Navarrini, Alessandro	CA	IAC-19.A7.2.3
Navarrini, Alessandro	CA	IAC-19.A6.IP.7
Navarro, Janina	CA	IAC-19.A4.2.7
Naveed, Mahmud	CA	IAC-19.B2.7.11
Navlani, Deeksha	CA	IAC-19.C4.6.6
Navukkarasan, Abishek	A	IAC-19.C1.IP.17

Name	Role	Paper
Navukkarasan, Abishek	CA	IAC-19.C1.9.4
Nawal, Adam	CA	IAC-19.D1.1.5
Nawal, Adam	CA	IAC-19.A2.4.5
Nayak, Deekshith	CA	IAC-19.C3.2.12
Nayak, Deekshith	CA	IAC-19.B4.6B.12
Naymark, Milena	CA	IAC-19.A1.IP.11
Nazarious, Miracle Israel	A	IAC-19.E5.IP.6
Nazarious, Miracle Israel	CA	IAC-19.A1.6.1
Ndiritu, Meshack	A	IAC-19.C3.2.10
Nechvola, Denis	A	IAC-19.E1.IP.11
Neduncheran, Adhithiyan	CA	IAC-19.A2.4.11
Neduncheran, Adhithiyan	CA	IAC-19.B1.6.12
Neduncheran, Adhithiyan	A	IAC-19.B5.3.8
Nefedov, Sergey	CA	IAC-19.A5.3-B3.6.9
Negoda, Sergiy	CA	IAC-19.E3.2.2
Negodiaev, Sergei	CA	IAC-19.A6.1.2
Negri, Andrea	CA	IAC-19.B5.3.4
Negri, Michele	CA	IAC-19.C4.9.1
Neilan, James	CA	IAC-19.A5.3-B3.6.6
Neish, Catherine	CA	IAC-19.A7.2.6
Nejadi, Pejman	A	IAC-19.B1.1.10
Nelessen, Adam	CA	IAC-19.B4.8.2
Nelson, Christopher	CA	IAC-19.A1.8.4
Nelson, John	CA	IAC-19.D4.IP.5
Nelson, Travis	CA	IAC-19.D5.IP.1
Nenarokomov, Aleksey V.	A	IAC-19.C2.7.6
Nenarokomov, Aleksey V.	CA	IAC-19.C2.8.2
Nenarokomov, Aleksey V.	CA	IAC-19.C2.8.9
Nenarokomov, Kirill	CA	IAC-19.C2.7.6
Nenzi, Paolo	CA	IAC-19.D5.3.10
Nepal, Ayush	CA	IAC-19.D5.1.2
Neralkar, Aditya	A	IAC-19.E2.4.9
Nercellas, Aaron	CA	IAC-19.B5.2.6
Nercellas, Aaron	CA	IAC-19.B4.IP.4
Neri, Gianluca	CA	IAC-19.A1.8.10
Neri, Gianluca	CA	IAC-19.A2.7.1
Neri, Gianluca	CA	IAC-19.A2.7.11
Nerovny, Nikolay	CA	IAC-19.E2.4.5
Nesnas, Issa A.	CA	IAC-19.C1.7.5
Ness, Jan-Uwe	CA	IAC-19.D5.3.3
Netti, Vittorio	CA	IAC-19.B6.3.7
Netti, Vittorio	A	IAC-19.B3.8-GTS.2.4
Neubert, Jeremiah	CA	IAC-19.B3.IP.2
Neuman, Mark	CA	IAC-19.D1.6.1
Neumann, Patrick	CA	IAC-19.E7.4.4
Neunzig, Oliver	CA	IAC-19.C3.5-C4.7.12
Neuzner, Andreas	CA	IAC-19.B3.3.8
Nevenzal, Hadas	CA	IAC-19.A5.2.13
Newland, Franz	CA	IAC-19.B4.3.6
Newman, Christopher	A	IAC-19.E7.3.9
Newman, Dava J.	CA	IAC-19.E5.1A.12
Newman, Dava J.	CA	IAC-19.B3.5.7
Newman, Josh	CA	IAC-19.A3.2B.4
Newton, Carolyn	CA	IAC-19.A5.IP.6
Newton, Elizabeth	CA	IAC-19.D2.5.4
Newton, Elizabeth	A	IAC-19.B5.2.4
Newton, Elizabeth	CA	IAC-19.C2.6.3
Newton, Elizabeth	CA	IAC-19.C2.IP.12
Newton, Elizabeth	CA	IAC-19.A5.4-D2.8.10
Newton, Elizabeth	CA	IAC-19.A5.4-D2.8.11
Ng, Alfred	CA	IAC-19.C1.3.6
Ng, Wee Meng	CA	IAC-19.C1.5.5
Ngamkajornwiwat, Potiwat	CA	IAC-19.A2.3.11
Ngo, Peter	CA	IAC-19.A3.3B.6
Ngo-Anh, Jennifer	CA	IAC-19.B3.3.1
Nguyen, Anh (Annie)	CA	IAC-19.A5.IP.4
Nguyen, Thien	A	IAC-19.E3.1.3
Nguyen, Van Quyet	CA	IAC-19.C4.5.11
Ni, Wei-Tou	CA	IAC-19.A2.IP.1
Nicholls, John	CA	IAC-19.C2.IP.15
Nick, Andrew	CA	IAC-19.A3.IP.11
Nicolas-Alvarez, Jorge	A	IAC-19.B1.2.10
Nicollier, Claude	CA	IAC-19.E5.1A.5
Nicolls, Michael	CA	IAC-19.A6.10-B4.10.1
Nie, Mingyan	A	IAC-19.E7.3.11

Name	Role	Paper
Niederstrasser, Carlos	A	IAC-19.B4.5.1
Niederstrasser, Carlos	A	IAC-19.E1.IP.5
Niederstrasser, Carlos	CA	IAC-19.E1.IP.29
Niederwieser, Tobias	CA	IAC-19.A2.7.9
Nikaido, Ben	CA	IAC-19.C1.9.1
Nikam, Omkar	CA	IAC-19.E1.5.7
Nikitin, Grigorii	CA	IAC-19.C1.IP.3
Nikonov, Vasily	CA	IAC-19.D4.3.16
Nikzad, Shouleh	A	IAC-19.B4.IP.35
Ning, Xin	CA	IAC-19.B1.IP.11
Ning, Xin	CA	IAC-19.A6.9.7
Nio, Wataru	CA	IAC-19.B4.6B.14
Nishihara, Jun	CA	IAC-19.C3.2.1
Nishiie, Takayuki	CA	IAC-19.C4.10.11
Nishiyama, Kazutaka	CA	IAC-19.C4.4.12
Nishiyama, Kazutaka	CA	IAC-19.C4.IP.15
Nislow, Corey	CA	IAC-19.A1.8.4
Nislow, Corey	CA	IAC-19.A2.7.9
Nissim Nir, Meir	CA	IAC-19.A3.2A.2
Nissim Nir, Meir	CA	IAC-19.A3.2A.11
Nissler, Christian	CA	IAC-19.A3.4B.4
Nitz, Moritz	A	IAC-19.E1.4.7
NIU, Aimin	A	IAC-19.B3.3.2
Niu, Kenichi	CA	IAC-19.D2.4.3
Nizami, Mohammed Abrar	CA	IAC-19.C4.IP.29
Nizami, Mohammed Abrar	CA	IAC-19.D2.IP.9
Nizenkov, Paul	CA	IAC-19.E1.IP.24
Nkansah, Kwasi	CA	IAC-19.A3.1.7
Nkansah, Kwasi	A	IAC-19.B3.2.5
Nkonki, Busisiwe	A	IAC-19.E3.3.8
Nkonki, Busisiwe	CA	IAC-19.E6.4.6
Noack, Daniel	CA	IAC-19.B2.3.10
Noack, Daniel	CA	IAC-19.C1.5.7
Noack, Daniel	A	IAC-19.C1.6.7
Noack, Daniel	CA	IAC-19.B2.7.9
Nodar, Diego	CA	IAC-19.B5.2.6
Nodar, Diego	A	IAC-19.B4.IP.4
Noe, Jason	CA	IAC-19.D2.5.4
Noelke, Daniel	CA	IAC-19.C2.7.2
Noga, Tomasz	CA	IAC-19.D2.6.8
Nogawa, Yuichiro	A	IAC-19.B6.3.4
Nohmi, Masahiro	CA	IAC-19.D4.3.10
Nokes, Charles	CA	IAC-19.B4.6B.2
Nolan, Michael	CA	IAC-19.A3.4A.7
Nolde, Michael	CA	IAC-19.E5.4.7
Nomen, Jaime	CA	IAC-19.A6.1.1
Nomen, Jaime	CA	IAC-19.B6.1.7
Nomura, Shunichiro	A	IAC-19.D1.4A.1
Nonaka, Satoshi	CA	IAC-19.D2.4.3
Nonaka, Satoshi	A	IAC-19.D2.6.4
Norberg, Olle	CA	IAC-19.E6.1.4
Nordmann, Stefan	CA	IAC-19.D1.2.1
Norman, Andrew	CA	IAC-19.C2.5.6
Noruthun, Hansley	A	IAC-19.E1.5.7
Nosanov, Jeffrey	A	IAC-19.A5.IP.5
Nosikova, Inna	CA	IAC-19.A1.2.4
Nosikova, Inna	CA	IAC-19.A1.2.5
Nosovsky, Andrey	CA	IAC-19.A1.3.1
Notaro, Virginia	CA	IAC-19.B2.7.2
Nouichi, Douae	CA	IAC-19.A7.2.4
Novakovic, Nikola	CA	IAC-19.B2.7.11
Novellino, Alessandro	CA	IAC-19.B1.1.11
Nowak, Maciej	CA	IAC-19.B4.9-GTS.5.5
Nowakowski, Pawel	CA	IAC-19.D2.6.8
Nugnes, Marco	A	IAC-19.C1.1.2
Nugraha, Ridha Aditya	CA	IAC-19.E1.7.6
Nummela, Niina	CA	IAC-19.E5.2.9
Nunes, Miguel	A	IAC-19.B4.2.7
Nunn, Geoff	A	IAC-19.E5.5.3
Nyaza, Kirill	CA	IAC-19.C2.5.8
Nyberg, Erik	CA	IAC-19.A2.3.8
Nye, Bill	CA	IAC-19.C4.8-B4.5A.2
Nyman, Leo	A	IAC-19.D3.2B.11
Nyugen, Chuong	CA	IAC-19.E1.2.1
Nüchter, Andreas	CA	IAC-19.E1.4.2

Name	Role	Paper
Nüchter, Andreas	CA	IAC-19.B4.7.9

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Name	Role	Paper
O'Connor, William	CA	IAC-19.C1.IP.16
O'Keeffe, Adrian	CA	IAC-19.E1.2.1
O'Neill, Charles	CA	IAC-19.B6.1.5
O'Neill, Mark J.	CA	IAC-19.C3.2.4
O'Neill, William	A	IAC-19.A5.1.12
O'Neill, William	CA	IAC-19.A5.4-D2.8.6
O'Sullivan, Rhonda	A	IAC-19.E7.IP.1
O'Toole, Conor	CA	IAC-19.C1.IP.16
O'Toole, Conor	A	IAC-19.A6.10-B4.10.5
Obafaye, Aderonke	CA	IAC-19.E1.5.7
Oberhaus, Daniel	A	IAC-19.A4.2.8
Oberhaus, Daniel	A	IAC-19.A4.2.9
Oberst, Jürgen	CA	IAC-19.A5.4-D2.8.9
Ocampo, Jonna	A	IAC-19.A1.IP.6
Ocasio-Christian, Jose	A	IAC-19.E6.2.1
Occhipinti, Giovanni	CA	IAC-19.B5.2.3
Oesterle, Aaron	A	IAC-19.E3.2.9
OGATA, Katsuhiko	CA	IAC-19.A1.IP.2
Ogawa, Naoko	CA	IAC-19.C1.2.4
Ogawa, Naoko	CA	IAC-19.A3.4A.3
Ogawa, Naoko	CA	IAC-19.A3.4A.5
Ogawa, Naoko	CA	IAC-19.C1.IP.11
Ogawa, Naoko	CA	IAC-19.C1.7.1
Ogawa, Naoko	CA	IAC-19.C1.7.2
Ogawa, Naoko	CA	IAC-19.C1.7.3
Ogawara, Akira	A	IAC-19.C4.3.7
Ogawara, Akira	CA	IAC-19.C4.10.11
Ogborne, Stuart	CA	IAC-19.A2.1.9
Ogneva, Irina	A	IAC-19.A1.8.14
Ogneva, Irina	CA	IAC-19.A1.8.15
Ogundipe, Collins	A	IAC-19.A7.3.4
Ogunleye, Olumide	CA	IAC-19.E3.IP.2
Ogunmolasuyi, Ayobami	CA	IAC-19.A2.3.9
Ogura, Tomoya	CA	IAC-19.C2.5.5
Oh, Hwayoung	CA	IAC-19.D2.2.9
Oh, Hwayoung	CA	IAC-19.D2.IP.4
Ohama, Yumi	A	IAC-19.B3.IP.3
Ohira, Genki	A	IAC-19.C1.9.8
OHIRA, Takashi	CA	IAC-19.A1.IP.2
Ohno, Keigo	CA	IAC-19.B4.6B.14
Ohrwall Ronnback, Anna	CA	IAC-19.E6.1.4
Ohtake, Makiko	CA	IAC-19.A3.2A.6
Ohtaki, Yuh	CA	IAC-19.A1.IP.2
Ohtsuka, Hirohito	CA	IAC-19.D2.3.8
OI, Yuichi	A	IAC-19.A1.IP.2
Oiko, Vitor	A	IAC-19.A2.1.10
Oikonomidou, Xanthi	CA	IAC-19.A6.1.3
Ojeda, Oscar	A	IAC-19.A1.3.15
Ojeda, Oscar	A	IAC-19.C3.3.4
Okada, Nobu	CA	IAC-19.A6.5.2
Okada, Nobu	CA	IAC-19.A6.6.9
Okada, Nobu	CA	IAC-19.E3.4.4
Okada, Nobu	CA	IAC-19.A6.10-B4.10.8
Okada, Nobu	CA	IAC-19.A6.8.7
Okada, Tatsuaki	CA	IAC-19.A3.4A.6
Okada, Tatsuaki	CA	IAC-19.A3.4B.2
Okamoto, Akira	CA	IAC-19.A6.5.2
Okamoto, Hiroyuki	CA	IAC-19.C1.6.6
Okamoto, Joe	CA	IAC-19.C1.2.5
Okamura, Yoshihiko	CA	IAC-19.D1.5.2
Okeng'o, Geoffrey	CA	IAC-19.B1.6.5
Okereka, George	CA	IAC-19.B1.IP.10
Okita, Koichi	CA	IAC-19.C4.1.4
Okita, Koichi	CA	IAC-19.C4.3.7
Okninski, Adam	CA	IAC-19.D2.6.8
Okolo, Wendy	CA	IAC-19.C1.9.1
Okumura, Yukiko	CA	IAC-19.E1.6.8
Okuyama, Kei-ichi	CA	IAC-19.B4.4.8
Okuyama, Shigeaki	CA	IAC-19.B4.6B.14
Olaniyanu, Emmanuel	CA	IAC-19.E2.4.10
Oleson, Steven	CA	IAC-19.A3.5.7
Oligschlager, Christopher	A	IAC-19.B1.5.2
Oliva, Jorge	CA	IAC-19.A4.2.7
Olivares, Marlon	CA	IAC-19.E1.3.4
Olivares, Marlon	CA	IAC-19.E1.5.9
Oliveira, Alvaro	A	IAC-19.E3.IP.1
Oliveira, Ingrid	A	IAC-19.E7.1.13
Olivieri, Lorenzo	A	IAC-19.A6.2.2
Olivieri, Lorenzo	A	IAC-19.A6.3.7
Olivieri, Lorenzo	CA	IAC-19.A6.3.8
Olivieri, Lorenzo	CA	IAC-19.A6.3.9
Olivieri, Lorenzo	CA	IAC-19.C2.5.2
Olivieri, Lorenzo	A	IAC-19.B4.6B.8
Olthoff, Claas	A	IAC-19.B3.8-GTS.2.1
Oltrogge, Daniel	CA	IAC-19.A6.2.9
Olufunke, Adebola	A	IAC-19.B5.2.7
Olugbemiro, Opeyemi	CA	IAC-19.E1.5.7
Oluwafemi, Funmilola Adebisi	CA	IAC-19.A1.4.12
Oluwafemi, Funmilola Adebisi	CA	IAC-19.E1.5.7
Oluwafemi, Funmilola Adebisi	A	IAC-19.A2.4.11
Oluwafemi, Funmilola Adebisi	A	IAC-19.A1.8.12
Olvera, Ana	CA	IAC-19.E1.6.6
Omaly, Pierre	CA	IAC-19.A6.4.10
Oman-Reagan, Michael	CA	IAC-19.A4.2.4
Omar, Sanny	A	IAC-19.A6.7.7
Omarova, Gulnara	A	IAC-19.E3.IP.5
Omoto, Keisuke	CA	IAC-19.B4.6B.14
Onagano, Kazunari	CA	IAC-19.D2.2.4
Onagano, Kazunari	CA	IAC-19.C4.IP.34
Ong, Joshua	CA	IAC-19.E1.1.5
Onga, Tadaoki	CA	IAC-19.C4.1.4
Ono, Go	CA	IAC-19.C1.2.4
Ono, Go	CA	IAC-19.A3.4A.3
Ono, Go	CA	IAC-19.A3.4A.5
Ono, Go	CA	IAC-19.C1.IP.11
Ono, Go	A	IAC-19.C1.7.1
Ono, Go	CA	IAC-19.C1.7.2
Ono, Go	CA	IAC-19.C1.7.3
Ono, Hitomi	CA	IAC-19.B2.2.2
Onuki, Misuzu	A	IAC-19.E6.2.9
Onuki, Misuzu	A	IAC-19.D6.3.8
Ooriah, Keshav	CA	IAC-19.E1.5.7
Oort, Marc	A	IAC-19.B1.3.1
Opher, Merav	CA	IAC-19.D4.4.2
Oraevskiy, Artem	CA	IAC-19.A2.7.12
ORDONNEAU, Gérard	CA	IAC-19.D2.IP.6
Orfano, Marco	CA	IAC-19.C1.5.4
Orfei, Alessandro	CA	IAC-19.A7.2.3
Oriol, Benoit	CA	IAC-19.C4.6.2
Oriol, Stephane	CA	IAC-19.A3.3A.11
Oriol, Stephane	CA	IAC-19.C4.4.11
Oriol, Stephane	CA	IAC-19.C2.7.2
Oriol, Stephane	CA	IAC-19.A5.4-D2.8.9
Orlando, Maria Patrizia	CA	IAC-19.A1.2.8
Orlov, Oleg	CA	IAC-19.B3.2.10
Orlov, Oleg	CA	IAC-19.A1.3.1
Orlov, Oleg	CA	IAC-19.A1.8.14
Orlov, Yuri	CA	IAC-19.A5.2.13
Orlov, Yurii	CA	IAC-19.A1.2.2
Ornik, Melkior	CA	IAC-19.D3.1.6
Oro, Ervin	CA	IAC-19.B4.8.7
Orr, Jeb	A	IAC-19.D2.9-D6.2.5
Orr, Nathan	CA	IAC-19.C4.8-B4.5A.8
Orr, Sophie	A	IAC-19.A1.8.11
Ortega, Guillermo	CA	IAC-19.D4.1.7
Ortega Flores, Brenda Vanessa	CA	IAC-19.E1.1.9
Ortega Flores, Brenda Vanessa	A	IAC-19.B1.5.9
Ortelt, Markus	A	IAC-19.C4.10.10
Ortiz, Antonio	CA	IAC-19.A5.3-B3.6.5
Ortiz-Gomez, Flor G.	A	IAC-19.B2.1.9
Ortmann, Tobias	CA	IAC-19.D4.3.12
Ortu, Pierluigi	CA	IAC-19.A7.2.3
Osborne, Barnaby	CA	IAC-19.A2.4.5
Osborne, Brian	CA	IAC-19.B2.3.9
Oshimori, Hiromu	CA	IAC-19.D4.3.10
Osinski, Gordon	CA	IAC-19.E1.1.4

Name	Role	Paper
Osinski, Gordon	A	IAC-19.A3.2C.7
Ospina, Sylvia	A	IAC-19.E7.3.6
Osterhammer, Martin	CA	IAC-19.D4.3.12
Oswald, Jean	CA	IAC-19.D2.7.11
Ota, Tomoki	A	IAC-19.C2.3.9
Otaru, Anonshka Obiageli	CA	IAC-19.E3.IP.2
Otieno, Vivian	A	IAC-19.B4.1.9
Otsuka, Kiyotoshi	CA	IAC-19.D4.3.5
Otto, Katharina	CA	IAC-19.A3.4B.4
Oun, Sreyneang	CA	IAC-19.E1.2.11
Oungrinis, Konstantinos-Alketas	CA	IAC-19.B3.8-GTS.2.6
Ouyang, Theodore	CA	IAC-19.E1.2.2
Ovchinnikov, Andrey	CA	IAC-19.C1.5.9
Ovchinnikov, Mikhail	CA	IAC-19.C1.5.9
Ovienmhada, Ufuoma	A	IAC-19.B1.5.10
Owens, Alexander	CA	IAC-19.A6.6.3
Ozaki, Naoya	CA	IAC-19.C1.2.5
Ozaki, Naoya	CA	IAC-19.C1.2.6
Ozawa, Kohei	A	IAC-19.C4.2.9
Ozawa, Yuichiro	CA	IAC-19.C3.2.1
Ozawa, Yusuke	CA	IAC-19.C1.5.12
P		
P, Natarajan	CA	IAC-19.C1.7.10
Pace, Emanuele	CA	IAC-19.C2.6.6
Pace, Luca	CA	IAC-19.B6.1.3
Pacheco Cabrera, Enrique	CA	IAC-19.B2.3.5
Pacros, Anne	A	IAC-19.A3.5.3
Padilha, Dan	CA	IAC-19.B5.1.5
Paffett, John	A	IAC-19.B4.IP.10
Paffett, John	CA	IAC-19.D1.IP.3
Pagan, Adam S.	CA	IAC-19.E1.IP.24
Pagan, Adam S.	CA	IAC-19.B3.7.8
Pagani, Alfonso	CA	IAC-19.C2.2.3
Paganucci, Fabrizio	CA	IAC-19.C4.IP.33
Paglialunga, Daniele	CA	IAC-19.A1.6.6
Pai, Karin	CA	IAC-19.B4.8.7
Pailes-Friedman, Rebeccah	CA	IAC-19.A5.3-B3.6.9
Paillet, Alex	CA	IAC-19.A7.3.5
Paissoni, Christopher Andrea	A	IAC-19.D4.1.8
Paissoni, Christopher Andrea	A	IAC-19.C4.6.5
Paissoni, Christopher Andrea	A	IAC-19.C4.IP.33
Paissoni, Christopher Andrea	A	IAC-19.B3.7.13
Pajas, Miriam	CA	IAC-19.A7.3.5
Pakosz, Michal	A	IAC-19.D2.6.8
Pal, Pritha	CA	IAC-19.D5.IP.4
Palacios López, Ricardo	CA	IAC-19.B3.7.6
Palak, Singh	CA	IAC-19.A6.6.3
Paleari, Lorenzo	CA	IAC-19.C2.5.6
Pallaschke, Siegmar	CA	IAC-19.D5.2.2
Pallichadath, Vidhya	CA	IAC-19.E2.1.2
Palma, David	CA	IAC-19.B4.7.13
Palmerini, Giovanni B.	CA	IAC-19.D1.3.7
Palmerini, Giovanni B.	CA	IAC-19.D5.3.10
Palmerini, Giovanni B.	CA	IAC-19.C1.8.1
Palmieri, Pierpaolo	CA	IAC-19.A6.5.10
Paloski, William	CA	IAC-19.A1.2.1
Paluszek, Michael	CA	IAC-19.C3.5-C4.7.10
Paluszek, Michael	CA	IAC-19.C3.3.8
Pan, Xiao	CA	IAC-19.C1.3.12
Pan, Xiao	A	IAC-19.C1.3.13
Panasyuk, Mikhail	CA	IAC-19.B4.2.5
Pancalli, Maria Giulia	CA	IAC-19.B2.2.8
Pancalli, Maria Giulia	CA	IAC-19.E1.3.8
Panda, Aman Kumar	CA	IAC-19.C4.5.5
Panda, Aman Kumar	CA	IAC-19.C3.IP.4
Panda, Garub	CA	IAC-19.B2.7.11
Pandey, Hrithik	CA	IAC-19.C3.2.7
Pandya, Shawna	A	IAC-19.B3.2.6
Pandya, Shawna	A	IAC-19.A1.4.7
Pandya, Shawna	CA	IAC-19.E1.7.12
Panesi, Renato	CA	IAC-19.B4.5.8
Panikulam, Jake	A	IAC-19.C1.7.8
Panitz, Corinna	A	IAC-19.A1.6.10
Panitz, Corinna	CA	IAC-19.A1.7.12
Pantalos, George	CA	IAC-19.A1.3.16
Pantalos, George	CA	IAC-19.A1.4.9
Pantazidis, Avgoustos	CA	IAC-19.B3.8-GTS.2.6
Paolozzi, Antonio	CA	IAC-19.A2.1.4
Papadimitriou, Angeliki	CA	IAC-19.E6.2.5
Papadimitriou, Angeliki	A	IAC-19.D5.4.7
Papic, Alvaro	CA	IAC-19.A1.7.9
Papoutsis, Ioannis	CA	IAC-19.C1.1.5
Paproth, Carsten	CA	IAC-19.A3.4B.9
Paquette, Beth	CA	IAC-19.B2.7.10
Paradiso, Joseph	CA	IAC-19.D4.1.13
Paradiso, Joseph	CA	IAC-19.E5.1A.12
Paradiso, Joseph	CA	IAC-19.B4.3.1
Paradiso, Joseph	CA	IAC-19.C2.9.7
Paradiso, Nunzia Maria	A	IAC-19.E3.1.11
Paranjape, Mihir	CA	IAC-19.E2.4.9
Paravan, Christian	CA	IAC-19.C4.2.11
Pardini, Carmen	A	IAC-19.A6.4.5
Pardini, Carmen	CA	IAC-19.A6.7.9
Pareek, Ritvik	A	IAC-19.C4.5.3
Parhi, Achutananda	CA	IAC-19.C4.5.4
Parhi, Achutananda	A	IAC-19.C4.2.4
Pari, Pierpaolo	CA	IAC-19.A4.1.11
Parikh, Joy	CA	IAC-19.C3.IP.6
Paris, Claudio	CA	IAC-19.A2.1.4
Paris, Claudio	A	IAC-19.C2.1.7
Paris, Sébastien	CA	IAC-19.A6.4.10
Parisi, Leonardo	CA	IAC-19.E1.3.8
Parizel, Paul M	CA	IAC-19.A1.2.4
Parizel, Paul M	CA	IAC-19.A1.2.5
Park, Beom-joon	CA	IAC-19.A3.2B.8
Park, Hyeongjun	A	IAC-19.D1.2.3
Park, Jong Youn	CA	IAC-19.C2.IP.9
PARK, JOOHO	A	IAC-19.B1.4.8
Park, Jung Ho	A	IAC-19.E3.3.9
Park, Justin	A	IAC-19.E1.2.12
Park, Soon-Young	A	IAC-19.C4.1.5
Park, Sungdong	A	IAC-19.B4.1.1
Park, Sungdong	CA	IAC-19.B1.2.5
Parker, Alex	CA	IAC-19.C4.4.13
Parker, Amy	A	IAC-19.B4.IP.17
Parkin, Kevin	A	IAC-19.D4.4.10
Parmantier, Jean-Philippe	CA	IAC-19.D2.IP.6
Parmar, Kanak	CA	IAC-19.C1.4.11
Parnas, Neta	CA	IAC-19.A5.2.13
Parodi, Jurek	CA	IAC-19.A1.7.7
Parr, James	A	IAC-19.B2.8-GTS.3.8
Parr, James	A	IAC-19.E5.4.6
Parr, James	A	IAC-19.B1.5.12
Parrella, Rosa Maria Lucia	A	IAC-19.E6.2.4
Parrella, Rosa Maria Lucia	CA	IAC-19.D4.IP.11
Parthasarathy, Varsha	A	IAC-19.B6.1.6
Partin, Conner	CA	IAC-19.C2.IP.12
Parwez, Nabil	CA	IAC-19.A5.1.14
Pasch, Bradley	CA	IAC-19.E2.3-GTS.4.7
Paschalis, Pavlos	CA	IAC-19.A1.5.1
Pasquale, Andrea	A	IAC-19.C1.3.4
Pastena, Massimiliano	CA	IAC-19.B4.4.4
Pastor-Rodríguez, Alejandro	CA	IAC-19.A6.9.3
Pastore, Roberto	A	IAC-19.E2.4.6
Pastore, Roberto	CA	IAC-19.C2.6.9
Pastore, Roberto	CA	IAC-19.C2.8.2
Pastushkova, Liudmila	A	IAC-19.A2.7.10
Patané, Simon	A	IAC-19.A7.3.7
Pataranutaporn, Pat	CA	IAC-19.A2.3.11
Patel, Chirag	CA	IAC-19.A1.5.5
Patel, Divyesh	CA	IAC-19.B5.3.8
Patel, Karnap	CA	IAC-19.E2.3-GTS.4.6
Patel, Kishan	CA	IAC-19.E2.4.9
Patel, Kuren	CA	IAC-19.D1.1.5
Patel, Nihar	A	IAC-19.C4.1.13
Patel, Parshati	A	IAC-19.E1.1.4
Patel, Parv	A	IAC-19.C1.9.11
Patel, Samira	CA	IAC-19.B4.7.2

Name	Role	Paper
Patel, Vishal	CA	IAC-19.C3.5-C4.7.7
Pathak, Shashank	A	IAC-19.C3.2.7
Patial, Samridh	CA	IAC-19.B1.1.11
Patial, Samridh	CA	IAC-19.C3.IP.4
Patil, Bhushan	CA	IAC-19.A3.5.8
Patil, KAVERI	CA	IAC-19.C3.3.6
Patil, Namaswi	CA	IAC-19.A1.8.7
Patil, Piyush	CA	IAC-19.B4.IP.16
Patil, Pranav	CA	IAC-19.E2.4.7
Patil, Pranav	CA	IAC-19.E2.4.8
Patil, Pranit	CA	IAC-19.A3.5.8
Patil, Pranit	A	IAC-19.A1.8.7
Patil, Rahul	CA	IAC-19.E2.4.9
Patil, Rohit	CA	IAC-19.E2.4.7
Patil, Rohit	A	IAC-19.E2.4.8
Patil, Sanjay	CA	IAC-19.E2.4.9
Patil, Sucheshnadevi	CA	IAC-19.A1.8.7
Patin, Raymond	CA	IAC-19.C2.1.3
Patroncini, Mauro	A	IAC-19.D1.3.1
Patterson, G. W.	CA	IAC-19.A3.IP.5
Patterson, Michael	CA	IAC-19.C4.4.2
Patton, William	CA	IAC-19.B6.1.5
Pattyn, Nathalie	CA	IAC-19.A1.1.9
PATUREAU de MIRAND, Antoine	A	IAC-19.D2.4.1
Patzelt, Aicke	CA	IAC-19.C2.1.8
Paudel, Saurav	CA	IAC-19.E1.IP.15
Paul, Jhon	CA	IAC-19.C4.2.3
Paul, Michael	CA	IAC-19.D4.4.1
Paul, Michael	CA	IAC-19.D4.4.2
Paul, Michael	CA	IAC-19.D4.4.4
Paulos, Todd	A	IAC-19.E6.4.13
Paulsen, Gale	CA	IAC-19.A3.3B.6
Pavarin, Daniele	CA	IAC-19.B2.1.3
Pavarin, Daniele	CA	IAC-19.C4.6.4
Pavarin, Daniele	CA	IAC-19.C4.8-B4.5A.5
Pavesi, Giulia	A	IAC-19.E3.4.9
Pavlik, Jiri	A	IAC-19.B5.1.11
Pavlis, Erricos C.	CA	IAC-19.A2.1.4
Pavlyuchenko, Veronika	CA	IAC-19.C4.6.7
Pavone, Rosario	CA	IAC-19.E6.1.8
Pawlicki, Diana	CA	IAC-19.C3.5-C4.7.8
Paxton, Larry	A	IAC-19.B4.2.2
Paz, Yoav	CA	IAC-19.A5.2.13
Pearson, David	CA	IAC-19.A2.5.3
Pearson, Jerome	CA	IAC-19.A6.5.4
Pechenkova, Ekaterina	CA	IAC-19.A1.2.4
Pechenkova, Ekaterina	CA	IAC-19.A1.2.5
Pecher, Romain	CA	IAC-19.A2.5.10
Pederbelli, Davide	A	IAC-19.E2.1.8
Pederbelli, Davide	A	IAC-19.C2.3.1
Pedersen, Don	CA	IAC-19.B3.3.12
Pederson, David	CA	IAC-19.E5.1A.2
Peet, Matthew	CA	IAC-19.D4.3.3
Peet, Matthew	CA	IAC-19.D4.3.4
Pegetti, Ana Lucia	CA	IAC-19.E5.4.8
Pelivan, Ivanka	CA	IAC-19.B4.8.12
Pell, Sarah Jane	A	IAC-19.E5.3.12
Pell, Sarah Jane	A	IAC-19.B3.8-GTS.2.5
Pellacani, Andrea	CA	IAC-19.A3.3B.8
Pellacani, Andrea	A	IAC-19.C1.7.12
Pellegrini, Gianni	CA	IAC-19.B5.3.4
Pellegrino, Jacopo	CA	IAC-19.B4.3.3
Pellegrino, Marielle	A	IAC-19.A6.5.7
Pellegrino, Sergio	CA	IAC-19.C2.2.3
Pellizzoni, Alberto	CA	IAC-19.A7.2.3
Pellouin, Clément	CA	IAC-19.C4.6.2
Peloni, Alessandro	CA	IAC-19.B4.8.12
Pelton, Joseph	CA	IAC-19.A3.2C.1
Peltz, Leora	CA	IAC-19.B3.7.7
Pelzner, Karol	CA	IAC-19.A2.3.7
Peng, Hao	A	IAC-19.A6.7.10
Peng, Wang	CA	IAC-19.C4.9.9
Pennazza, Giorgio	CA	IAC-19.A1.2.8
Pensado, Alejandro	CA	IAC-19.D3.2A.10
Pensado, Alejandro	CA	IAC-19.D4.5.15

Name	Role	Paper
Penso, Roee	A	IAC-19.B6.2.4
Pepermans, Lars	A	IAC-19.D2.3.3
Pepper, Sean	CA	IAC-19.D1.3.6
Pepper, Sean	CA	IAC-19.A3.2C.8
Perchenko, Elizaveta	CA	IAC-19.A1.5.10
Perchenko, Elizaveta	CA	IAC-19.B4.7.4
Perczyński, Filip	CA	IAC-19.C2.IP.21
Perepechkin, Ilia	CA	IAC-19.A6.1.2
Pererva, Viktor	CA	IAC-19.C4.IP.35
Pereyra, Carlota	CA	IAC-19.A4.2.7
Perez, Arllene	CA	IAC-19.B4.6A.7
Perez, Guy	CA	IAC-19.C2.3.3
Perez, Guy	CA	IAC-19.E6.1.13
Perez, Guy	CA	IAC-19.B2.5.2
Perez, Jerome	CA	IAC-19.A3.IP.21
Perez, Victor	CA	IAC-19.C3.IP.1
Perez Cano, Jose Santiago	CA	IAC-19.A2.1.10
Perez Cano, Jose Santiago	CA	IAC-19.C1.1.3
Perez Cano, Jose Santiago	CA	IAC-19.B4.6A.2
Perez Cano, Jose Santiago	CA	IAC-19.C2.6.1
Perez Gonzalez, Jose Alvaro	CA	IAC-19.C1.7.9
Perez Martinez, Ricardo	CA	IAC-19.D5.3.3
Perez Ramirez, Bryan	A	IAC-19.B3.7.6
Perez-Poch, Antoni	A	IAC-19.A1.2.13
Perez-Poch, Antoni	A	IAC-19.D5.2.4
Perez-Poch, Antoni	CA	IAC-19.A2.3.5
Pergola, Pierpaolo	CA	IAC-19.B5.3.4
Perinciolo, Massimo	CA	IAC-19.D1.3.1
Perini, Federico	CA	IAC-19.A6.9.9
Perino, Maria Antonietta	A	IAC-19.A5.1.3
Permatasari, Yunita	A	IAC-19.E6.3.10
Peroni, Moreno	CA	IAC-19.A6.7.9
Perozzi, Ettore	CA	IAC-19.A6.7.9
Perrel, Françoise	CA	IAC-19.D2.7.11
Perrin, Thomas	A	IAC-19.D3.2A.5
Perrodin, Delphine	CA	IAC-19.A4.1.11
Perry, Beverly	CA	IAC-19.B4.5.5
Perry, Beverly	CA	IAC-19.A5.4-D2.8.1
Perry, Ryan	CA	IAC-19.C1.IP.7
Persad, Aaron	CA	IAC-19.A2.3.9
Persad, Aaron H.	A	IAC-19.E1.3.9
Persad, Aaron H.	A	IAC-19.A2.4.2
Persad, Aaron H.	CA	IAC-19.E1.7.12
Pertenais, Martin	CA	IAC-19.A3.4B.9
Perycz, Malgorzata	CA	IAC-19.A1.6.7
Perycz, Malgorzata	CA	IAC-19.A1.6.11
Perycz, Malgorzata	CA	IAC-19.A1.8.8
Pesce, Vincenzo	CA	IAC-19.A3.3B.8
Pessina, Stefano	CA	IAC-19.B6.1.7
Peter, Gisbert	CA	IAC-19.A3.4B.9
Peter-Jan, Derks	CA	IAC-19.D2.3.3
Petermann, Timon	CA	IAC-19.B6.IP.7
Peters, Thomas Vincent	A	IAC-19.C1.7.9
Petersen, Lonnie	CA	IAC-19.A1.2.7
Peterson, Colin	CA	IAC-19.B4.2.3
Peterson, Glenn	A	IAC-19.A6.7.3
Peterson, Joe	A	IAC-19.C1.9.2
Peterson, Samuel	CA	IAC-19.A7.IP.4
Peterson, Timothy	CA	IAC-19.E5.4.10
Petit, Alexis	A	IAC-19.A6.IP.13
Petit, Gaetan	CA	IAC-19.E1.7.4
Petkov, Ivaylo	CA	IAC-19.C2.4.10
Petrakova, Elena	A	IAC-19.E3.1.9
Petrenko, Olexandr	A	IAC-19.C4.4.4
Petrenko, Valerii	CA	IAC-19.A1.IP.11
Petro, Andrew	A	IAC-19.D3.1.1
Petro, Andrew	A	IAC-19.D3.4.1
Petro, Elaine	CA	IAC-19.A5.4-D2.8.3
Petros, Eloi	A	IAC-19.E7.1.11
Petros, Eloi	A	IAC-19.D6.3.6
Petrov, George	CA	IAC-19.E2.3-GTS.4.6
Petrov, Georgi	CA	IAC-19.D4.1.2
Petrov, Peter	CA	IAC-19.E1.4.8
Petschelt, Stefan	A	IAC-19.B3.3.4
Pettersson, Anders	CA	IAC-19.C4.10.12

Name	Role	Paper
Pettit, Alan	CA	IAC-19.A6.1.3
Peura, Angela D.	CA	IAC-19.E1.6.7
Peyvan, Kia	CA	IAC-19.A2.7.8
Peña, Pablo Fajardo	CA	IAC-19.C2.IP.7
Peñin, Luis F.	CA	IAC-19.B4.IP.24
Pfanne, Martin	CA	IAC-19.D1.6.8
Pfau, Martin	CA	IAC-19.A5.3-B3.6.2
Pfeiffer, Marcel	CA	IAC-19.E1.IP.24
Pfeil, Norbert	A	IAC-19.B6.3.1
Phanse, Ajinkya	A	IAC-19.E2.3-GTS.4.4
Philipp, Robert	CA	IAC-19.B6.1.2
Phillips-Hungerford, Taylor	A	IAC-19.D1.1.9
Phillips-Hungerford, Taylor	CA	IAC-19.E5.1A.11
Phipps, Andy	CA	IAC-19.A6.5.1
Phongphisantham, Tanis	CA	IAC-19.A2.3.11
Piacenza, Chiara	CA	IAC-19.A1.2.8
Piacenza, Chiara	CA	IAC-19.A1.3.3
Piacenza, Chiara	CA	IAC-19.A2.6.9
Piacenza, Chiara	CA	IAC-19.A2.6.10
Piacesi, Maria Teresa	CA	IAC-19.E5.4.8
Pianorsi, Mattia	CA	IAC-19.A6.8.4
Piazza, Aurore	CA	IAC-19.C2.6.7
Picard, Martin	CA	IAC-19.A3.2B.4
Picardi, Luigi	CA	IAC-19.D5.3.10
Picci, Niccolò	CA	IAC-19.A6.10-B4.10.2
Piccirillo, Sara	CA	IAC-19.A1.2.8
Piccirillo, Sara	CA	IAC-19.A1.3.3
Piccirillo, Sara	CA	IAC-19.A2.6.9
Piech, Adam	CA	IAC-19.E3.3.10
Piergentili, Fabrizio	CA	IAC-19.B2.2.8
Piergentili, Fabrizio	CA	IAC-19.E1.3.8
Piergentili, Fabrizio	CA	IAC-19.B2.4.7
Piergentili, Fabrizio	CA	IAC-19.B2.4.8
Piergentili, Fabrizio	CA	IAC-19.A6.7.9
Piergentili, Fabrizio	CA	IAC-19.A6.10-B4.10.2
Pieroni, Luca	CA	IAC-19.A2.7.1
Pierotti, Stephane	CA	IAC-19.D1.2.5
Pieroux, Didier	CA	IAC-19.B4.2.13
Pierret, Frédéric	CA	IAC-19.C1.3.10
Piersanti, Luca	CA	IAC-19.D5.3.10
Piest, Baptist	CA	IAC-19.A2.3.6
Piet-Lahanier, Hélène	CA	IAC-19.C4.5.2
Pietras, Markus	CA	IAC-19.D1.3.3
Pietras, Markus	CA	IAC-19.E2.3-GTS.4.10
Pigliaru, Lucia	A	IAC-19.C2.5.6
Piguet, Luc	CA	IAC-19.A6.8.6
Pihui, Zhang	CA	IAC-19.A6.9.7
Pike, Tom	CA	IAC-19.A3.3A.5
Pilarski, Krzysztof	CA	IAC-19.C2.IP.21
Pilgrim, Christopher	CA	IAC-19.C2.IP.15
Pilia, Maura	CA	IAC-19.A4.1.11
Pillai, Ramlingam Gyanasampath	A	IAC-19.D2.IP.17
Pilles, Eric	CA	IAC-19.A3.2C.7
Pilorget, Cedric	CA	IAC-19.A3.4A.6
Pimpi, Jannik	CA	IAC-19.D1.3.3
Pimpi, Jannik	CA	IAC-19.E2.3-GTS.4.10
Pines, Darryll	CA	IAC-19.B2.6.5
Ping, Jinsong	CA	IAC-19.B4.2.11
Ping, Jinsong	CA	IAC-19.A3.2B.1
Pinkine, Nickalaus	CA	IAC-19.A3.5.1
Pino, Josep	CA	IAC-19.B4.6B.10
Pino, Paolo	CA	IAC-19.A5.1.9
Pino, Paolo	CA	IAC-19.A3.IP.8
Pino, Paolo	A	IAC-19.D4.5.5
Pino, Paolo	A	IAC-19.A1.7.14
Pinsky, Lawrence	A	IAC-19.A1.5.4
Pinto, Roven	CA	IAC-19.E2.4.7
Pinto, Roven	CA	IAC-19.E2.4.8
Pinto, Tiago	CA	IAC-19.B4.6A.5
Pinto Ferreira, Sara	CA	IAC-19.E7.IP.16
Piperno, Osvaldo	CA	IAC-19.E3.2.6
Piperno, Osvaldo	CA	IAC-19.E3.6.4
Piragino, Antonio	CA	IAC-19.C4.4.6
Pirat, Camille	CA	IAC-19.E1.7.4
Pirrotta, Simone	CA	IAC-19.B2.2.8
Pirrotta, Simone	CA	IAC-19.C1.5.4
Pirrotta, Simone	CA	IAC-19.A1.6.6
Pirrotta, Simone	CA	IAC-19.A6.10-B4.10.2
Pirrotta, Simone	CA	IAC-19.B4.8.8
Pirschel, Kjell	CA	IAC-19.B4.6B.11
Pisanu, Tonino	CA	IAC-19.A7.2.3
Pisanu, Tonino	A	IAC-19.A6.IP.7
Pisanu, Tonino	CA	IAC-19.A6.7.9
Pisseloup, Aurelien	CA	IAC-19.A6.5.1
Pitcher, Craig	CA	IAC-19.A3.2C.6
Pizzurro, Simone	CA	IAC-19.B4.2.8
Pizzurro, Simone	CA	IAC-19.D4.IP.11
Piña López, Yair Israel	A	IAC-19.B4.1.11
Piña López, Yair Israel	A	IAC-19.C3.3.10
Platero, Valorie	A	IAC-19.B2.1.4
Platonov, Alexander	CA	IAC-19.B5.2.10
Pleintinger, Benedikt	CA	IAC-19.A5.3-B3.6.2
Plettemeier, Dirk	CA	IAC-19.B4.8.12
Ploeckl, Marina	A	IAC-19.B2.3.3
Ploeckl, Marina	A	IAC-19.B2.4.3
Plummer, Gabriel	CA	IAC-19.A1.1.6
Poddighe, Antonio	CA	IAC-19.A4.1.7
Podhajsky, Sandra	A	IAC-19.A1.7.4
Podladchikova, Tatiana	CA	IAC-19.A1.5.10
Podladchikova, Tatiana	CA	IAC-19.A1.5.11
Podladchikova, Tatiana	CA	IAC-19.B4.7.4
Podwalski, Ken	CA	IAC-19.A3.1.3
Podwalski, Ken	CA	IAC-19.B3.1.3
Pohorille, Andrew	CA	IAC-19.A2.7.8
Pokrovskaya, Marina	A	IAC-19.E6.4.8
Polit Casillas, Raul	CA	IAC-19.A3.1.6
Polit Casillas, Raul	CA	IAC-19.B6.2.9
Polit Casillas, Raul	A	IAC-19.C3.2.9
Polit Casillas, Raul	CA	IAC-19.D3.2A.2
Polit Casillas, Raul	CA	IAC-19.D3.2A.4
Polk, JD	CA	IAC-19.A1.3.6
Polk, JD	CA	IAC-19.A1.4.3
Polk, JD	CA	IAC-19.A1.4.4
Pollice, Luciano	CA	IAC-19.C2.5.1
Pollice, Luciano	A	IAC-19.C2.5.12
Pollini, Alexandre	CA	IAC-19.A6.5.1
Pollini, Alexandre	CA	IAC-19.A6.6.7
Polschikov, Sergei	CA	IAC-19.E2.4.5
Polsgrove, Tara	CA	IAC-19.B3.1.8
Ponchon, Paul	CA	IAC-19.C4.6.2
Ponomaryov, Sergey	CA	IAC-19.A1.4.13
Pons Lorente, Arnau	A	IAC-19.C4.10.9
Pont, Gabriel	A	IAC-19.A3.3A.5
Pontani, Mauro	CA	IAC-19.C1.4.3
Pontani, Mauro	A	IAC-19.C1.8.8
Ponticelli, Beatrice	CA	IAC-19.B1.3.2
Ponziani, Donatella	A	IAC-19.B5.2.1
Popa, Lucia Aurelia	A	IAC-19.A7.2.11
Pope, Michael	A	IAC-19.A5.3-B3.6.8
Popova, Rada	CA	IAC-19.A6.4.6
Popova, Rada	A	IAC-19.E7.5.6
Popova, Rada	A	IAC-19.E7.7.4
Popper, Joseph	A	IAC-19.E1.9.14
Porras, Daniel	A	IAC-19.E7.5.4
Porseva, Svetlana	CA	IAC-19.E2.4.5
Porst, Jan-Patrick	CA	IAC-19.C4.4.8
Porter, Bob	CA	IAC-19.D6.1.6
Posey, Jerry	CA	IAC-19.A1.5.5
Pospisil, Stanislav	CA	IAC-19.A3.3A.11
Pospisil, Stanislav	CA	IAC-19.A5.4-D2.8.9
Possnig, Carmen	CA	IAC-19.A1.1.9
Postmaa, Alex	CA	IAC-19.E2.3-GTS.4.3
Pothier, Benjamin	CA	IAC-19.E1.IP.34
Pothier, Benjamin	A	IAC-19.E5.IP.5
Pothier, Benjamin	CA	IAC-19.A3.2C.9
Pothina, Harika	A	IAC-19.E2.1.9
Potrivitu, George Cristian	CA	IAC-19.B5.3.8
Pott, Christoph	A	IAC-19.B3.4-B6.4.11
Potter, Seth	CA	IAC-19.C3.2.3
Potter, Seth	CA	IAC-19.D3.2A.7

Name	Role	Paper
Pouzin, Norbert	A	IAC-19.E2.2.7
Pradines, Alice	CA	IAC-19.A7.3.5
Prado, Jean-Yves	A	IAC-19.A3.IP.21
Prajapati, Rakesh Chandra	CA	IAC-19.E1.IP.15
Prakasha, Anuradha	A	IAC-19.B6.3.3
Praks, Jaan	CA	IAC-19.B4.8.7
Prasad, Chitresh	CA	IAC-19.C2.8.10
Prater, Tracie	CA	IAC-19.E5.1A.8
Prater, Tracie	CA	IAC-19.C2.7.12
Prater, Tracie	A	IAC-19.D3.2B.5
Pratesi, Giovanni	CA	IAC-19.C2.6.6
Pravec, Petr	CA	IAC-19.A3.4B.5
Prematthilaka, Sachintha	CA	IAC-19.A1.8.4
Present, Samuel	CA	IAC-19.C2.5.3
Preston, Deborah	CA	IAC-19.B2.7.11
Price, Daniel	CA	IAC-19.A4.1.1
Price, Daniel	CA	IAC-19.A4.1.3
Price, Ian	CA	IAC-19.A6.4.8
Price, Samuel	CA	IAC-19.B3.4-B6.4.2
Prieto, Ines	A	IAC-19.E5.5.2
Prieto Díaz, José Enrique	CA	IAC-19.B4.4.11
Prieto Díaz, José Enrique	A	IAC-19.B2.5.8
Prinetto, Jacopo	A	IAC-19.C1.2.3
Prinetto, Jacopo	CA	IAC-19.C1.5.4
Prinetto, Jacopo	A	IAC-19.B4.IP.27
Prioroc, Claudiu-Lucian	CA	IAC-19.C1.7.12
Prioroc, Claudiu-Lucian	CA	IAC-19.A3.4B.6
Priot, Benoit	CA	IAC-19.B2.6.8
Pritchard-Kelly, Ruth	A	IAC-19.B2.5.1
Pritchett, Robert	A	IAC-19.C1.1.10
Pritykin, Dmitry	CA	IAC-19.D1.2.8
Pritykin, Dmitry	A	IAC-19.C1.6.9
Pritykin, Dmitry	CA	IAC-19.B4.IP.21
Pritykin, Dmitry	CA	IAC-19.A6.8.6
Prochnicki, Paul	CA	IAC-19.C4.1.13
Proenca, Pedro	CA	IAC-19.C2.3.11
Profitiliotis, Georgios	A	IAC-19.B3.8-GTS.2.6
Profitiliotis, Georgios	A	IAC-19.E6.5-GTS.1.4
Prohaska, Marcel	CA	IAC-19.A6.IP.21
Prokopchuk, Alexandr	A	IAC-19.C4.1.6
Pronk, Zeholy	CA	IAC-19.E5.5.4
Propst, Martin	CA	IAC-19.C4.10.8
Prosina, Anastasia	CA	IAC-19.E5.1A.4
Prost, Daniel	CA	IAC-19.D2.IP.6
Protz, Christoper	CA	IAC-19.C4.3.4
Protz, Christoper	CA	IAC-19.C4.3.5
Proulx, Nicholas	A	IAC-19.C4.IP.23
Prouse, Robin	CA	IAC-19.E1.IP.1
Provornikova, Elena	CA	IAC-19.B4.2.2
Provornikova, Elena	CA	IAC-19.D4.4.2
Prunariu, Dorin	CA	IAC-19.E5.IP.11
Pryanichnikov, Valentin	CA	IAC-19.B2.1.1
Prybyla, A.V.	CA	IAC-19.A1.IP.11
Prysyazhnyuk, Anastasiia	A	IAC-19.A1.3.5
Przybyla, Bartos	CA	IAC-19.A1.5.5
Prébot, Baptiste	A	IAC-19.A1.IP.7
Pugia, Steven	A	IAC-19.C4.8-B4.5A.9
Puisa, Veronika	CA	IAC-19.E1.IP.4
Puma-Guzman, Rosalyn	A	IAC-19.B4.1.8
Punni, Hema	CA	IAC-19.C4.6.9
Punni, Hema	A	IAC-19.C2.6.10
Punzo, Francesco	CA	IAC-19.D2.6.7
Pupillo, Giuseppe	CA	IAC-19.A6.9.9
Puppa, Andrea	CA	IAC-19.A6.IP.1
Purpura, Carlo	CA	IAC-19.C2.6.6
Purpura, Carlo	CA	IAC-19.D2.6.7
Pushparaj, Nishanth	CA	IAC-19.C1.2.5
Pust, Michael	A	IAC-19.B2.3.10
Pust, Michael	CA	IAC-19.B2.7.9
Pusztai, Peter	A	IAC-19.E5.4.12
Puthukkudy, Anin	CA	IAC-19.B1.2.7
Putzar, Robin	A	IAC-19.A6.3.10
PV, Pushpa	CA	IAC-19.B2.5.9
Pyne, Budhaditya	CA	IAC-19.B1.1.11
Påhlsson, Philip	CA	IAC-19.D2.2.7

Name	Role	Paper
Pérez, Carlos	CA	IAC-19.A3.3B.11
Pérez-Lissi, Franco	CA	IAC-19.B4.6B.7
Pérez-Roca, Sergio	A	IAC-19.C4.5.2
Pütz, Daniel	A	IAC-19.B3.7.2
Pączkowska, Daria	CA	IAC-19.C2.IP.21
Q		
Qedar, Ran	A	IAC-19.B4.3.3
Qedar, Ran	CA	IAC-19.B4.IP.26
Qedar, Ran	CA	IAC-19.B6.3.1
QI, Feng	A	IAC-19.D4.1.9
Qi, Nie	A	IAC-19.D2.5.2
Qi, Zhaohui	CA	IAC-19.C2.3.12
QIAN, YAO	A	IAC-19.B2.4.4
Qiu, Chengxu	CA	IAC-19.C4.IP.25
Qu, Min	CA	IAC-19.A5.4-D2.8.8
Quantius, Dominik	CA	IAC-19.B4.8.12
Quaregna, Abele	CA	IAC-19.A5.1.3
Quemerais, Eric	CA	IAC-19.B4.2.2
Quintana, Joel	A	IAC-19.B4.6A.12
Quintana Díaz, Gara	A	IAC-19.B2.8-GTS.3.7
quiroz olivares, antony elmer	CA	IAC-19.B4.IP.22
Quizzagan, Harlee	CA	IAC-19.B2.8-GTS.3.9
R		
R, Devika	CA	IAC-19.C4.5.9
R Kadhane, Umesh	CA	IAC-19.C4.4.7
R Koushik, Pradyumna	CA	IAC-19.A1.8.1
Rabagliati, Lorenzo	CA	IAC-19.A5.1.9
Rabagliati, Lorenzo	A	IAC-19.A3.IP.8
Rabbow, Elke	CA	IAC-19.A1.6.10
Rabbow, Elke	CA	IAC-19.A1.7.12
Rabin, Julien	CA	IAC-19.C4.4.10
Rabineau, Jeremy	A	IAC-19.A1.IP.10
Rachkin, Dmitry	CA	IAC-19.C4.6.7
Rachucki, Jakub	A	IAC-19.C3.3.11
Rack, Kathrin	CA	IAC-19.A6.IP.21
Rade, Domingos	CA	IAC-19.C2.3.7
Radtke, Jonas	CA	IAC-19.B6.2.2
Radu, Silvana	A	IAC-19.D1.1.6
Radu, Silvana	A	IAC-19.B4.6B.15
Radyjowski, Patryk	CA	IAC-19.C2.IP.2
Rafaelof, Menachem	A	IAC-19.A1.2.6
Rafalo, Dominika	CA	IAC-19.B4.9-GTS.5.5
Rafalo, Dominika	CA	IAC-19.C2.IP.21
Rafano Carnà, Simone Flavio	CA	IAC-19.D1.2.1
Raffa, Samuele	CA	IAC-19.B4.6B.4
RAFFIER, Bertrand	A	IAC-19.C1.5.1
Rafflegeau, Arthur	CA	IAC-19.A3.4B.8
Rahamimoff, Adi	CA	IAC-19.D1.1.5
Raina, Samanyu	CA	IAC-19.D2.IP.9
Raizanski, Mikhail	CA	IAC-19.A5.2.13
Raj, Arun	CA	IAC-19.C4.2.3
Rajamane, Nirmalakumar Parshwanath	CA	IAC-19.C2.8.10
Rajan, Raj Thilak	A	IAC-19.D1.2.4
Rajan, Raj Thilak	A	IAC-19.B2.2.12
Rajan, Raj Thilak	A	IAC-19.A7.3.11
Rajan, Raj Thilak	CA	IAC-19.A7.3.12
Rajan, Raj Thilak	CA	IAC-19.A3.IP.12
Rajan, Raj Thilak	CA	IAC-19.B2.7.5
Rajendran, Anushri	A	IAC-19.A5.2.8
Rakhimov, Ruslan	CA	IAC-19.C4.6.10
Rakotoniaina, Sitraka	CA	IAC-19.E1.9.14
Ralph, Alyssa	CA	IAC-19.C4.8-B4.5A.7
Ramachandran Venkatapathy, Aswin Karthik	CA	IAC-19.B3.4-B6.4.11
Ramachandran Venkatapathy, Aswin Karthik	CA	IAC-19.C2.9.7
Ramakrishna, Devaraju	A	IAC-19.B2.5.9
Raman, Nishant	CA	IAC-19.C3.IP.6
Ramirez, Roy	A	IAC-19.C4.IP.10
Ramirez, Sergio	CA	IAC-19.B2.3.5
Ramirez, Victoria	CA	IAC-19.B2.1.7

Name	Role	Paper
Ramirez Aguilar, Jose Alberto	A	IAC-19.E1.3.6
Ramm, Steven	CA	IAC-19.A5.1.2
Rammelkamp, Kristin	CA	IAC-19.A3.4B.9
Ramos, Gonzalo	CA	IAC-19.A3.3B.11
Ramos Meza, Julio Alberto	CA	IAC-19.D2.7.4
Ramsay, Brian	A	IAC-19.B2.8-GTS.3.4
Rana, Loveneesh	A	IAC-19.D2.4.4
Rana, Zaid	A	IAC-19.A7.IP.4
Rangel, Javier	CA	IAC-19.C3.4.2
Ranjan Saxena, Neelesh	A	IAC-19.E2.1.11
Rankin, Ian	A	IAC-19.B4.9-GTS.5.8
Rankin, Kyle	CA	IAC-19.B4.9-GTS.5.8
Ranvier, Sylvain	A	IAC-19.B4.2.13
Ranyuk, Ekaterina	A	IAC-19.E7.IP.21
Rao, Mukund Kadursrinivas	CA	IAC-19.E7.3.10
Rao, Mukund Kadursrinivas	A	IAC-19.B1.5.5
Rao, Sandya	A	IAC-19.C2.5.4
Rao, Sandya	A	IAC-19.B2.IP.7
Rao, Sandya	A	IAC-19.C3.IP.7
Rao, Sandya	A	IAC-19.D1.IP.6
Rao Ashok Kumar, Divya	A	IAC-19.E2.4.1
Raposo, Ana	A	IAC-19.E1.5.8
Rapp, Lucien	CA	IAC-19.E3.4.11
Rapp, Lucien	CA	IAC-19.A6.8.5
Rapp, Lucien	CA	IAC-19.D5.4.1
Rasel, Ernst Maria	CA	IAC-19.A2.3.6
Rasera, Joshua	A	IAC-19.C2.IP.10
Rashford, Robert	CA	IAC-19.D4.1.12
Rastinasab, Vahid	CA	IAC-19.B4.4.10
Ratcliffe, Andrew	A	IAC-19.D6.1.3
Ratcliffe, Andrew	A	IAC-19.D6.3.7
Rath, Michael	CA	IAC-19.C4.4.8
Rathnasabapathy, Minoo	A	IAC-19.A6.8.9
Rattenbury, Nicholas	CA	IAC-19.C4.4.1
Ravagnolo, Liliana	A	IAC-19.B3.5.5
Ravi Shankar, Rakesh	A	IAC-19.D5.IP.1
Ravichandran, Rahul Ravi	A	IAC-19.C4.IP.29
Ravichandran, Srinath	CA	IAC-19.E6.1.11
Ravichandran, Srinath	CA	IAC-19.C1.IP.17
Ravichandran, Srinath	CA	IAC-19.A6.9.10
Ravichandran, Srinath	CA	IAC-19.C1.9.4
Ravinder, Nitin	CA	IAC-19.A6.1.3
Rawat, Rahul	CA	IAC-19.A6.IP.17
Rawat, Rahul	CA	IAC-19.B1.IP.14
Rawlins, Samantha	A	IAC-19.C3.5-C4.7.6
Ray, Paul	CA	IAC-19.B3.4-B6.4.2
Raykunov, Konstantin	A	IAC-19.A3.2A.9
Rayman, Marc D.	A	IAC-19.A3.4A.1
Raymond, Xaivian	CA	IAC-19.A3.1.1
Raza, Mudassir	CA	IAC-19.C3.2.5
Razgus, Bronislovas	CA	IAC-19.D2.5.3
Razmajevs, Pavels	A	IAC-19.B2.IP.8
Razoumny, Yury	CA	IAC-19.C3.2.8
Reales, Guillermo	CA	IAC-19.A2.IP.6
Reddy, Narravula Harshavardhan	CA	IAC-19.C2.2.3
Redfern, Jillian	A	IAC-19.B4.7.7
Redondo, Carlos	A	IAC-19.B3.4-B6.4.5
Redondo Gutierrez, Jose Luis	A	IAC-19.B4.6A.4
Reed, Cheryl	A	IAC-19.A3.4A.8
Reed, Harvey	A	IAC-19.A6.IP.6
Reed, Harvey	CA	IAC-19.E3.4.10
Reed, John	CA	IAC-19.B4.5.6
Reed, Mark	CA	IAC-19.C3.5-C4.7.7
Reershemius, Siebo	CA	IAC-19.B4.8.12
Reese, Carsten	A	IAC-19.A7.3.2
Reeves, David	CA	IAC-19.D4.5.15
Reganaz, Mattia	CA	IAC-19.A3.2C.6
Rehnmark, Fredrik	CA	IAC-19.A3.3B.6
Rehnmark, Fredrik	CA	IAC-19.A3.5.5
Reibaldi, Giuseppe	CA	IAC-19.D4.2.6
Reibaldi, Giuseppe	CA	IAC-19.D4.5.1
Reibe, Mathias	CA	IAC-19.B4.6A.1
Reigenborn, Martín	CA	IAC-19.D2.5.3
Reihs, Benedikt	A	IAC-19.A6.9.2
Reill, Josef	CA	IAC-19.A3.4A.6
Reill, Josef	CA	IAC-19.A3.4B.8
Reimuller, Jason	CA	IAC-19.A1.4.7
Reimuller, Jason	CA	IAC-19.E1.IP.32
Reimuller, Jason	CA	IAC-19.E1.7.12
Reina, Manuel	CA	IAC-19.A7.3.5
Reinert, Steffen	CA	IAC-19.E1.8.4
Reinthal, Eric	A	IAC-19.B2.7.13
Reising, Christoph	A	IAC-19.A6.IP.3
Reiss, Philipp	CA	IAC-19.D1.3.6
Reiss, Philipp	CA	IAC-19.A3.2C.6
Reissner, Alexander	CA	IAC-19.C4.8-B4.5A.13
Reiswich, Martin	A	IAC-19.E2.2.8
Reiter, Jason	CA	IAC-19.A6.9.6
Rembala, Richard	CA	IAC-19.A5.3-B3.6.3
Remedia, Marcello	A	IAC-19.C2.1.9
Remer, Lorraine	CA	IAC-19.B1.2.7
Remetean, Emile	CA	IAC-19.A3.4B.8
Rempel, Sawyer	A	IAC-19.B2.IP.4
Rempel, Sawyer	CA	IAC-19.E1.IP.25
Rempel, Sawyer	CA	IAC-19.E1.IP.26
Ren, Lili	A	IAC-19.B1.IP.11
Ren, Lili	CA	IAC-19.C2.IP.3
Rencelj, Matija	A	IAC-19.E7.1.4
Renfrew, Royce	CA	IAC-19.B3.3.14
Renga, Alfredo	A	IAC-19.B4.7.8
Renger, Thomas	CA	IAC-19.B4.8.12
Renno, Nilton	CA	IAC-19.E2.3-GTS.4.1
Renotte, Etienne	A	IAC-19.B1.3.7
Resce, Margherita	A	IAC-19.E6.2.8
Ressurreicao, Tiago	CA	IAC-19.B4.6A.5
Resta, Pier Domenico	CA	IAC-19.D2.1.5
Resta, Pier Domenico	CA	IAC-19.B4.5.10
Retat, Ingo	CA	IAC-19.A6.5.1
Rettberg, Petra	CA	IAC-19.A1.6.1
Rettberg, Petra	CA	IAC-19.A1.6.3
Rettberg, Petra	CA	IAC-19.A1.6.10
Rettberg, Petra	A	IAC-19.A1.7.12
Revilla Veleda, Javier	CA	IAC-19.E2.1.5
Revilla Veleda, Javier	CA	IAC-19.C2.IP.18
Rey, Daniel	CA	IAC-19.B3.1.7
Reyes, Juan Carlos	CA	IAC-19.B5.1.3
reyes getial, francisco javier	CA	IAC-19.B2.3.8
Reyes Mantilla, Camilo Andrés	CA	IAC-19.B4.1.4
Reyes Mantilla, Camilo Andrés	CA	IAC-19.C3.1.10
Reyes Mantilla, Camilo Andrés	CA	IAC-19.A5.1.14
Reyes Mantilla, Camilo Andrés	CA	IAC-19.B4.7.10
Reyes Mantilla, Camilo Andrés	CA	IAC-19.D6.3.2
Reyes-Barranca, Mario Alfredo	CA	IAC-19.C2.8.6
Reyes-Vera, Isaac	CA	IAC-19.A1.7.17
Reymen, Isabelle	CA	IAC-19.D5.2.9
Reymen, Isabelle	CA	IAC-19.E6.3.6
Reza, Maryam	CA	IAC-19.C4.4.6
Reza Arcelus, Saul	A	IAC-19.D6.1.12
Rezende, Julio	CA	IAC-19.E3.IP.1
Riccardi, Annalisa	CA	IAC-19.D5.2.7
Ricci, Sabrina	CA	IAC-19.E1.4.4
Ricci, Sabrina	CA	IAC-19.A6.IP.22
Ricciardi, Lorenzo Angelo	CA	IAC-19.C1.2.1
Ricciardi, Lorenzo Angelo	CA	IAC-19.D2.IP.3
Riccobono, Dario	CA	IAC-19.B3.7.13
Richard-Noca, Muriel	CA	IAC-19.A6.8.6
Richardson, David	A	IAC-19.D1.4B.2
Richardson, Guy	CA	IAC-19.C2.2.6
Richey, Danielle	CA	IAC-19.A5.1.2
Richter, Ines	CA	IAC-19.B2.4.3
Richter, Lutz	CA	IAC-19.A3.2A.2
Richter, Lutz	A	IAC-19.A3.2A.11
Richter, Lutz	CA	IAC-19.A3.2C.6
Richter, Martin	CA	IAC-19.A3.3A.11
Richter, Martin	CA	IAC-19.C4.4.11
Richter, Martin	CA	IAC-19.C2.7.2
Richter, Martin	CA	IAC-19.A5.4-D2.8.9
Rickmers, Peter	CA	IAC-19.D2.6.9
Riede, Wolfgang	CA	IAC-19.A6.1.9
Riedel, David	CA	IAC-19.E5.1A.9

Name	Role	Paper
Riehmer, Johannes	CA	IAC-19.D2.4.5
Riehmer, Johannes	CA	IAC-19.D2.6.2
Riemann, Johannes	CA	IAC-19.B4.8.12
Riemer, Arne	CA	IAC-19.D2.3.2
Riesbeck, Luc	CA	IAC-19.E6.2.2
Riesbeck, Luc	A	IAC-19.E3.4.5
Rievers, Benny	A	IAC-19.A2.1.6
Rievers, Benny	CA	IAC-19.C1.IP.5
Rifert, Vladimir	A	IAC-19.A1.IP.11
Righini, Simona	CA	IAC-19.A7.2.3
Rihan, Mohammad	CA	IAC-19.A7.2.4
Riley, Timothy	A	IAC-19.B3.2.8
Rinaldi, Joseph-Raffael	CA	IAC-19.D4.3.9
Rinaldi, Marianna	CA	IAC-19.C2.5.6
Rincon, Sonia	CA	IAC-19.B2.3.8
Ringelberg, John	CA	IAC-19.B4.8.6
Riquelme, Diego	A	IAC-19.B5.1.3
Rischka, Klaus	CA	IAC-19.A1.6.3
Rist, Amber	CA	IAC-19.B3.7.5
Ristov, Martin	A	IAC-19.D1.3.4
Ritter, Birgit	CA	IAC-19.A3.4B.6
Ritter, Scott	A	IAC-19.D4.2.8
Ritter, Scott	A	IAC-19.D3.IP.3
Ritter, Scott	A	IAC-19.A2.7.16
Rittweger, Andreas	CA	IAC-19.D2.6.9
Ritzenthaler, Lucie	A	IAC-19.D2.7.9
Rivadeneira, Steven	CA	IAC-19.A5.2.2
Rivas-Davila, Juan	CA	IAC-19.C4.4.1
Rivero Gonzalez, Jorge	CA	IAC-19.E1.6.9
Rivero Gonzalez, Jorge	CA	IAC-19.E5.5.5
Rivoalen, Inés	CA	IAC-19.A2.2.7
Rivoalen, Inés	CA	IAC-19.A2.4.6
Rivolta, Aureliano	CA	IAC-19.A6.6.3
Rixon, Greg	CA	IAC-19.C2.5.9
Rizzo, Luca	A	IAC-19.B2.3.1
Roalf, David	CA	IAC-19.A1.1.2
Robbins, David	CA	IAC-19.E2.3-GTS.4.6
Roberson, Tyler	CA	IAC-19.C2.5.9
Roberts, Christopher	CA	IAC-19.D3.2B.5
Roberts, Mallory	CA	IAC-19.B4.2.6
Roberts, Mark	CA	IAC-19.B4.9-GTS.5.8
Roberts, Michael	A	IAC-19.A2.7.15
Roberts, Peter C.E	CA	IAC-19.C1.1.3
Roberts, Peter C.E	CA	IAC-19.C4.6.3
Roberts, Peter C.E	CA	IAC-19.B4.6A.2
Roberts, Peter C.E	A	IAC-19.C2.6.1
Roberts, Peter C.E.	CA	IAC-19.A2.1.10
Roberts, Thomas G.	A	IAC-19.D1.IP.1
Robertson, Bradford	A	IAC-19.D2.4.10
Robertson, Bradford	CA	IAC-19.D1.4B.1
Robinson, Bryan	CA	IAC-19.B2.7.10
Robinson, Julie A.	A	IAC-19.B3.3.14
Robinson, Kimberly	A	IAC-19.B4.5.5
Robinson, Kimberly	CA	IAC-19.A5.4-D2.8.1
Robison, Kathryn	A	IAC-19.E3.IP.8
Robles, Alvin	CA	IAC-19.B2.7.3
Robles Hernández, Tania María	A	IAC-19.E5.2.8
Robson, Christopher	CA	IAC-19.B4.6B.2
Rocco, Jose	CA	IAC-19.E1.IP.8
Rocha, Stephanie	CA	IAC-19.D1.1.5
Rocha de Carvalho, Luiz Fernando	CA	IAC-19.B1.5.7
Rocha de Oliveira, Marta	A	IAC-19.D1.5.9
Roda, Aldo	CA	IAC-19.A1.6.6
Rodgers, Erica	A	IAC-19.D3.2A.10
Rodin, Alexander	CA	IAC-19.A6.1.2
Rodman, Donna	CA	IAC-19.E5.1B.4
Rodrigues, Lewton	CA	IAC-19.C2.3.7
Rodrigues, Pedro	CA	IAC-19.B1.2.12
Rodrigues, Pedro	A	IAC-19.B4.6A.5
Rodriguez, Gerardo	CA	IAC-19.C2.5.2
Rodriguez, Jorge	A	IAC-19.E2.4.12
Rodriguez, Pedro	CA	IAC-19.D5.3.3
Rodriguez, Roberto	A	IAC-19.E5.1B.3
Rodriguez Prieto, Jose	CA	IAC-19.A3.3B.11
Rodríguez, Carlos	CA	IAC-19.E1.3.4

Name	Role	Paper
Rodríguez, Carlos	A	IAC-19.E1.5.9
Rodríguez, Hugo	CA	IAC-19.C1.IP.1
Rodríguez, Pedro	CA	IAC-19.D1.2.5
Rodríguez Pérez, Pablo	CA	IAC-19.A3.4B.9
Rodríguez-Blanco, Jairo	CA	IAC-19.E1.3.4
Rodríguez-Blanco, Jairo	CA	IAC-19.E1.5.9
Roelof, Edmond	CA	IAC-19.B4.2.2
Roelof, Edmond	CA	IAC-19.D4.4.1
Roffman, Kaila	A	IAC-19.C2.2.4
Rogers, Henk	CA	IAC-19.E1.IP.34
Rogers, Henk	CA	IAC-19.E5.IP.5
Rogers, Henk	CA	IAC-19.A3.2C.1
Rogers, Henk	CA	IAC-19.A3.2C.9
Rogers, Henk	A	IAC-19.A3.2C.11
Rogers, Lindsay	CA	IAC-19.E1.5.10
Rogers, Rebecca	CA	IAC-19.B4.IP.16
Rogez, Yves	CA	IAC-19.B4.8.12
Roh, Woongrae	CA	IAC-19.C4.1.12
Rohr, Thomas	CA	IAC-19.C2.5.6
Rohrbeck, Mathias	CA	IAC-19.A5.1.3
Rohrbeck, Mathias	A	IAC-19.B3.7.4
Rohrwild, Karlheinz	A	IAC-19.E4.1.1
Rojas, Juan J.	CA	IAC-19.B4.IP.13
Rolla, Antonio	A	IAC-19.B2.4.5
Roma, Ilaria	CA	IAC-19.D1.5.9
Roma, Mauro	CA	IAC-19.A6.9.9
Romagnoli, Marco	CA	IAC-19.B2.2.4
Roman, Monsi	CA	IAC-19.E5.1A.8
Roman, Monsi	CA	IAC-19.E3.2.4
Roman Molinas, Alejandro J.	A	IAC-19.E1.IP.10
Roman-Gonzalez, Avid	A	IAC-19.E1.5.11
Roman-Gonzalez, Avid	A	IAC-19.B4.IP.22
Romanelli, Cristoforo	CA	IAC-19.B2.4.8
Romanenko, Dmitry	CA	IAC-19.C4.6.7
Romani, Romano	CA	IAC-19.B2.4.2
Romano, Diego Giuseppe	CA	IAC-19.D2.7.11
Romano, Francesco	A	IAC-19.C4.6.3
Romano, Giampaolo	CA	IAC-19.C2.9.8
Romano, Marcello	A	IAC-19.C1.8.7
Romanov-Chernigovsky, Ignaty	CA	IAC-19.D1.1.5
Romei, Federico	CA	IAC-19.A6.4.6
Romei, Federico	CA	IAC-19.C2.5.2
Romero, Faviola	A	IAC-19.B1.3.3
Romero-Calvo, Álvaro	CA	IAC-19.D1.1.8
Romero-Calvo, Álvaro	A	IAC-19.A2.2.7
Romero-Calvo, Álvaro	A	IAC-19.A2.4.6
Romero-Calvo, Álvaro	A	IAC-19.C1.6.4
Rominger, Kent	A	IAC-19.C4.2.1
Romo Fuentes, Carlos	CA	IAC-19.E1.3.6
Ronci, Robert	A	IAC-19.E7.1.3
Ronci, Robert	CA	IAC-19.E6.2.1
Ronsivalle, Concetta	CA	IAC-19.D5.3.10
Rosenfeld, Wenjamin	CA	IAC-19.B4.2.14
Rosengren, Aaron J.	CA	IAC-19.C1.3.11
Rosenqvist, Ake	CA	IAC-19.B4.IP.17
Rosenstein, Aaron	A	IAC-19.A1.8.9
Roser, Xavier	CA	IAC-19.A5.1.3
Roser, Xavier	CA	IAC-19.B3.7.4
Roshanian, Jafar	CA	IAC-19.A3.3B.5
Roshanian, Jafar	CA	IAC-19.C1.IP.6
Rosius, Philippe	CA	IAC-19.B2.6.1
Ross, Kenton	CA	IAC-19.E1.5.10
Ross, Martin	CA	IAC-19.B4.7.2
Rossi, Alessandro	A	IAC-19.A6.2.5
Rossi, Alessandro	CA	IAC-19.A6.4.2
Rossi, Alessandro	A	IAC-19.A6.4.6
Rossi, Alessandro	CA	IAC-19.C2.5.2
Rossi, Alessandro	CA	IAC-19.A6.6.4
Rossi, Alessandro	CA	IAC-19.A6.IP.13
Rossi, Alessandro	CA	IAC-19.E7.7.4
Rossi, Stefano	A	IAC-19.B4.5.7
Rossi, Stefano	A	IAC-19.B5.3.2
Rossi, Tommaso	CA	IAC-19.B2.3.1
Rossodivita, Angela	CA	IAC-19.C4.4.6
Rostami, Jamal	CA	IAC-19.A3.IP.10

Name	Role	Paper
Rostami, Jamal	CA	IAC-19.D4.5.12
Roszkowski, Dominik	CA	IAC-19.B4.9-GTS.5.5
Roszkowski, Dominik	CA	IAC-19.A6.10-B4.10.7
Roth, Niels	CA	IAC-19.C4.8-B4.5A.8
Rotko, Daniel	CA	IAC-19.D1.1.5
Rotter, Sven	CA	IAC-19.B4.6A.1
Rotteveel, Jeroen	CA	IAC-19.B4.2.11
Rotteveel, Jeroen	CA	IAC-19.A3.2B.1
Rotteveel, Jeroen	CA	IAC-19.B4.9-GTS.5.4
ROUQUETTE, Sébastien	CA	IAC-19.A1.7.13
Roussel, Jean-Francois	CA	IAC-19.D5.3.8
Roviera, Pier Michele	A	IAC-19.D2.2.1
Roy Choudbury, Jayati	CA	IAC-19.A1.4.10
Roychowdhury, Debdeep	CA	IAC-19.B4.IP.2
Rozand, Christine	A	IAC-19.A1.7.13
Rozemeijer, Mark	CA	IAC-19.D2.3.3
Ruber, Simon	CA	IAC-19.B3.5.8
Rubinstein, Hilel	A	IAC-19.A5.2.13
Rubio Blanes, Alberto	A	IAC-19.B1.3.4
Rucker, Michelle	CA	IAC-19.B3.3.14
Rucker, Michelle	CA	IAC-19.A5.2.1
Rucker, Michelle	CA	IAC-19.A5.2.2
Ruf, Christopher	CA	IAC-19.B4.IP.25
Ruffer, Michael	CA	IAC-19.B4.8.12
Rufolo, Giuseppe	CA	IAC-19.D2.5.6
Ruge, Sven	CA	IAC-19.B4.4.6
Ruggieri, Marina	CA	IAC-19.B2.3.1
Rughani, Rahul	A	IAC-19.D1.2.9
Rughani, Rahul	A	IAC-19.B4.IP.16
Rughani, Rahul	CA	IAC-19.D1.6.9
Rugina, Ana	CA	IAC-19.A3.4A.9
Rugor, Piotr	CA	IAC-19.C3.3.11
Ruhhammer, Florian	A	IAC-19.D5.2.8
Ruhl, Maxine	CA	IAC-19.A1.2.4
Ruhl, Maxine	CA	IAC-19.A1.2.5
Ruiter, Joanna	CA	IAC-19.E3.1.3
Ruiter, Mark	A	IAC-19.B4.2.11
Ruiter, Mark	CA	IAC-19.A3.2B.1
Ruiter, Mark	CA	IAC-19.A7.3.9
Ruiz, Mike	CA	IAC-19.E1.5.10
Ruiz de Azúa Ortega, Joan Adrià	A	IAC-19.B2.1.7
Ruiz de Azúa Ortega, Joan Adrià	CA	IAC-19.D1.2.5
Ruiz de Azúa Ortega, Joan Adrià	CA	IAC-19.B4.IP.34
Ruiz de Azúa Ortega, Joan Adrià	CA	IAC-19.B4.6B.3
Rukavishnikov, Ilya	CA	IAC-19.A1.2.4
Rukavishnikov, Ilya	CA	IAC-19.A1.2.5
Rull, Fernando	CA	IAC-19.A3.3B.11
Rull, Fernando	CA	IAC-19.A3.4B.9
Rumford, Timothy	CA	IAC-19.B4.5.14
Rumshiskaya, Alena	CA	IAC-19.A1.2.4
Rumshiskaya, Alena	CA	IAC-19.A1.2.5
Runte, Torben	A	IAC-19.C2.3.3
Runyon, Kirby	CA	IAC-19.D4.4.2
Rusanov, Vasily	CA	IAC-19.A1.3.5
Rusanova, Oxana	CA	IAC-19.C2.5.8
Rusconi, Andrea	CA	IAC-19.A3.3B.7
Russi-Vigoya, Natalia	CA	IAC-19.D1.4B.3
Russo, Aloisia	A	IAC-19.D1.1.8
Russo, Enrico	CA	IAC-19.D6.3.11
Russo, Pedro	CA	IAC-19.E1.2.5
Russo, Pedro	CA	IAC-19.E1.6.9
Russo, Pedro	CA	IAC-19.E5.5.5
Ruttley, Tara	CA	IAC-19.A3.1.1
Ruttley, Tara	CA	IAC-19.B3.3.1
Ruusmann, Laura	CA	IAC-19.B4.8.7
Ryan, Alexander	A	IAC-19.C4.IP.9
Ryan, Alexander	CA	IAC-19.A6.7.4
Ryan, Charlie	CA	IAC-19.C4.8-B4.5A.10
Ryan, Conor	CA	IAC-19.A3.4B.9
Ryan, Stephen W.	CA	IAC-19.D3.2B.7
Rykova, Marina	CA	IAC-19.A1.4.13
Rymer, Abigail	CA	IAC-19.D4.4.2
Ryne, Mark	CA	IAC-19.A3.5.1
Ryszawa, Ewelina	CA	IAC-19.B4.9-GTS.5.5
Ryszawa, Ewelina	CA	IAC-19.C2.IP.21
Rödiger, Benjamin	CA	IAC-19.B4.2.14
Rüede, Anne-Marlene	CA	IAC-19.A5.2.12
Rüede, Anne-Marlene	A	IAC-19.A3.IP.18

S

S, Soundarya	CA	IAC-19.C3.3.6
S, Srinivasan	CA	IAC-19.C4.5.9
S Rajan, Adhithya	A	IAC-19.B1.5.6
Saaj, Chakravarthini	CA	IAC-19.D1.6.6
Saba, Andrea	CA	IAC-19.A7.2.3
Sabath, Dieter	CA	IAC-19.B3.4-B6.4.7
Sabath, Dieter	CA	IAC-19.B3.7.2
Sabatini, Marco	CA	IAC-19.C2.3.6
Sabatini, Marco	CA	IAC-19.D1.3.7
Sabatini, Marco	CA	IAC-19.D5.3.10
Sabatini, Marco	CA	IAC-19.C1.8.1
Sabbatinelli, Beatrice	A	IAC-19.B4.IP.6
Sabbatinelli, Beatrice	CA	IAC-19.B5.3.4
Sacchetti, Marco	CA	IAC-19.A6.8.4
Sacco, Patrizia	A	IAC-19.B1.5.4
Saccoccia, Giorgio	CA	IAC-19.D4.1.7
Saccoccia, Giorgio	CA	IAC-19.C4.4.9
Saccoccia, Giorgio	CA	IAC-19.C4.6.5
Sachasiri, Ravit	CA	IAC-19.B5.3.9
Sadeghi, Mohammedzamaan	CA	IAC-19.C2.6.4
Safavi, Haleh	CA	IAC-19.B2.1.10
Safavi, Haleh	CA	IAC-19.B2.2.5
Safavi, Haleh	CA	IAC-19.E1.5.4
Safavi, Haleh	CA	IAC-19.B2.7.11
Saganti, Premkumar	CA	IAC-19.B4.4.8
Sagaria, Shehna	CA	IAC-19.C3.IP.3
Saget, Jeremy	CA	IAC-19.A1.3.10
Saget, Jeremy	CA	IAC-19.A1.4.7
Sagie, Ephie	CA	IAC-19.A3.2A.2
Saha, Sayantan	A	IAC-19.D2.IP.9
Sahani, Rishabh	CA	IAC-19.E2.4.10
Sahani, Rishabh	A	IAC-19.C2.9.10
Sahu, Chhavilata	CA	IAC-19.C1.7.10
Sai Ganesh, Purini	CA	IAC-19.A6.IP.17
Sai Ganesh, Purini	CA	IAC-19.B1.IP.14
Saiki, Takanao	CA	IAC-19.C1.2.4
Saiki, Takanao	CA	IAC-19.A3.4A.2
Saiki, Takanao	CA	IAC-19.A3.4A.3
Saiki, Takanao	A	IAC-19.A3.4A.5
Saiki, Takanao	CA	IAC-19.A3.4A.6
Saiki, Takanao	CA	IAC-19.C1.IP.11
Saiki, Takanao	CA	IAC-19.C1.7.1
Saiki, Takanao	CA	IAC-19.C1.7.2
Saiki, Takanao	CA	IAC-19.C1.7.3
Saiki, Takanao	CA	IAC-19.A3.4B.1
Saini, Himani	A	IAC-19.B1.IP.8
Saini, Parmesh	CA	IAC-19.B3.IP.5
Saito, Hirobumi	A	IAC-19.B4.4.2
SAITO, Tamaki	CA	IAC-19.A1.IP.2
Sakai, Eiichi	CA	IAC-19.B2.2.2
Sakai, Shin-ichiro	CA	IAC-19.C1.7.7
Sakamoto, Hiraku	CA	IAC-19.B4.6B.14
Sakamoto, Mitsuya	CA	IAC-19.D2.1.9
SAKAMOTO, Ryotaro	A	IAC-19.C1.6.8
Sakraker, Isil	CA	IAC-19.D1.3.5
Sala Minucci, Marco Antonio	CA	IAC-19.D2.6.3
Salameh, Belal	CA	IAC-19.E1.4.8
Salamon, Nick	A	IAC-19.C4.IP.22
Salanova, Michele	CA	IAC-19.A1.4.14
Salas-Natera, Miguel	CA	IAC-19.B2.1.9
Salazar, Francisco	A	IAC-19.C1.4.10
Salazar, George	CA	IAC-19.D1.4B.3
Salcedo, Ante	CA	IAC-19.C2.8.6
Saleh, Joseph Homer	CA	IAC-19.E3.3.2
Salem, Ali	CA	IAC-19.C2.IP.4
Saliev, Evgeny	CA	IAC-19.B4.IP.9
Salina, Gaetano	CA	IAC-19.A1.5.13
Salini, Joseph	CA	IAC-19.A3.2C.6
Salmeri, Antonino	A	IAC-19.D4.5.8

Name	Role	Paper
Salmon, Thierry	CA	IAC-19.A6.5.1
Salosina, Margarita	A	IAC-19.C2.8.9
Salotti, Jean-Marc	A	IAC-19.A5.2.7
Salotti, Jean-Marc	CA	IAC-19.A1.IP.7
Salussolia, Marcella	CA	IAC-19.A5.1.3
Salzgeber, Frank M	CA	IAC-19.E6.1.5
Samanga, Ruvimbo	A	IAC-19.E2.2.4
Samaniego Balbuena, Gustavo Ramón	CA	IAC-19.E1.2.8
Sameoto, Dan	CA	IAC-19.B4.6B.2
Samoil, Katie	A	IAC-19.A1.3.14
Sampson, Melissa	CA	IAC-19.B2.3.9
Sampson, Melissa	A	IAC-19.D2.5.9
Samson, Victoria	CA	IAC-19.E3.4.7
San Miguel, Carlos	CA	IAC-19.A2.IP.6
San Miguel, Carlos	CA	IAC-19.C2.IP.18
San Millan, Javier	CA	IAC-19.A7.3.5
San-Juan, Juan Félix	CA	IAC-19.C1.3.10
Sanchez, Celia	CA	IAC-19.D5.3.3
Sanchez, Diogo	CA	IAC-19.A5.IP.3
Sanchez, Javier	CA	IAC-19.C1.1.4
Sanchez, Luis	A	IAC-19.A6.IP.20
Sanchez, William	A	IAC-19.D1.2.2
Sanchez, William	A	IAC-19.C1.8.12
Sanchez Cebrian, Alberto	A	IAC-19.C2.7.11
Sanchez Cuartielles, Joan Pau	CA	IAC-19.A2.1.9
Sanchez Cuartielles, Joan Pau	A	IAC-19.C1.IP.7
Sanchez Cuartielles, Joan Pau	CA	IAC-19.C1.7.6
Sanchez Gamez, Miguel Angel	CA	IAC-19.E1.1.9
Sanchez Gamez, Miguel Angel	CA	IAC-19.B6.IP.8
Sanchez Ortiz, Noelia	A	IAC-19.A6.1.1
Sandal, Gro M.	A	IAC-19.A1.1.4
Sandal, Gro M.	CA	IAC-19.A1.1.5
Sanders, Michael	CA	IAC-19.B4.6B.9
Sanders, Stephen	CA	IAC-19.A3.3A.9
Sangiovanni, Guido	CA	IAC-19.A3.3B.7
Sanjust, Filippo	CA	IAC-19.A1.2.8
Sankaran, Praveen	CA	IAC-19.E3.1.9
Sanlorenzo, Martina	CA	IAC-19.A1.4.15
Sano, Edson Eyji	CA	IAC-19.B1.5.7
Sansone, Francesco	CA	IAC-19.B4.6B.8
Santeramo, Daniele Antonio	CA	IAC-19.C1.3.5
Santilli, Giancarlo	A	IAC-19.B4.IP.28
Santilli, Giancarlo	CA	IAC-19.B1.5.7
Santilllan- Gutierrez, Saul	A	IAC-19.B4.1.12
Santoni, Fabio	CA	IAC-19.B4.1.9
Santoni, Fabio	CA	IAC-19.B2.2.8
Santoni, Fabio	CA	IAC-19.E1.3.8
Santoni, Fabio	A	IAC-19.E1.4.4
Santoni, Fabio	CA	IAC-19.B2.4.7
Santoni, Fabio	CA	IAC-19.B2.4.8
Santoni, Fabio	CA	IAC-19.E2.4.6
Santoni, Fabio	CA	IAC-19.C2.6.9
Santoni, Fabio	CA	IAC-19.A6.10-B4.10.2
Santoni, Fabio	CA	IAC-19.C2.8.2
Santonico, Marco	CA	IAC-19.A1.2.8
Santonicola, M. Gabriella	CA	IAC-19.C2.8.8
Santori, Andrea	CA	IAC-19.B4.5.11
Santoro, Francesco	CA	IAC-19.B2.4.8
Santoro, Francesco	A	IAC-19.D6.3.4
Santos, Cristiana	A	IAC-19.A6.8.5
Santos, Cristiana	CA	IAC-19.D5.4.1
Santra, Shreya	CA	IAC-19.B4.7.10
Sanvido, Silvia	CA	IAC-19.A6.4.9
Sanz Casado, Alvaro	CA	IAC-19.B4.8.3
Sanz Nieto, Irene	CA	IAC-19.A3.2C.8
Sao, Visal	CA	IAC-19.E1.2.11
Sapia, Adalberto	CA	IAC-19.B2.4.2
Sapone, Rosa	CA	IAC-19.B3.5.5
Sapp, Benjamin	CA	IAC-19.B1.4.6
Sappington, Rebecca	A	IAC-19.A3.3B.1
Sarafin, Michael	CA	IAC-19.B3.1.9
Sarafin, Michael	A	IAC-19.D2.9-D6.2.3
Sarah, Maria-Gabriella	A	IAC-19.D5.2.6
Sarah, Maria-Gabriella	A	IAC-19.E6.IP.1
Sarang, Mehak	CA	IAC-19.E5.2.6

Name	Role	Paper
Sarangi, Tathagat	CA	IAC-19.C4.IP.29
Sarda, Karan	CA	IAC-19.C4.8-B4.5A.8
Sarego, Giulia	CA	IAC-19.A6.2.2
Sarego, Giulia	CA	IAC-19.A6.3.7
Sarego, Giulia	CA	IAC-19.A6.3.8
Sarego, Giulia	A	IAC-19.A6.3.9
Sargent, Russell	CA	IAC-19.C1.1.7
Sarkar, Pratik	CA	IAC-19.D2.IP.9
Sarti, Francesco	CA	IAC-19.B1.3.2
Sarton du Jonchay, Tristan	CA	IAC-19.D3.1.4
Sarton du Jonchay, Tristan	CA	IAC-19.A5.2.4
Sarton du Jonchay, Tristan	A	IAC-19.D3.4.4
SASAHARA, Shin-ichiro	CA	IAC-19.A1.IP.2
Sasaki, Kaname	CA	IAC-19.A3.4A.6
Sasaki, Kaname	CA	IAC-19.B4.8.12
Sasaki, Kaname	CA	IAC-19.A3.4B.2
Sasaki, Kaname	CA	IAC-19.A3.4B.8
Sasaki, Kenji	CA	IAC-19.C3.2.1
Sasaki, Takahiro	A	IAC-19.C1.6.6
Sascha, Müller	CA	IAC-19.D1.4B.5
Sate, Janis	CA	IAC-19.B4.8.7
Sathiaraj, Amanda Michelle Simran	A	IAC-19.C3.1.9
Sathnur, Ashwini	A	IAC-19.A2.7.13
Sato, Kota	A	IAC-19.A6.2.11
Sato, Masaki	A	IAC-19.C4.1.7
Sato, Masaki	CA	IAC-19.C4.1.11
Sato, Shunsuke	CA	IAC-19.C1.2.5
Satoh, Takaaki	CA	IAC-19.C1.5.12
Satpathy, Sagar	A	IAC-19.D2.3.7
Sauls, Bob G.	CA	IAC-19.D3.2B.7
Save, Himanshu	CA	IAC-19.B6.3.2
Savelyeva, Mila	A	IAC-19.D2.1.8
Savelyeva, Mila	A	IAC-19.D2.2.10
Savelyeva, Mila	A	IAC-19.D2.3.11
Savinkov, Vasily	CA	IAC-19.B3.3.1
Savino, Luigi	CA	IAC-19.C2.6.6
Savino, Raffaele	CA	IAC-19.C4.5.7
Savino, Raffaele	CA	IAC-19.C2.4.4
Savino, Raffaele	CA	IAC-19.D2.6.7
Savio, Giuseppe	CA	IAC-19.A4.2.7
Sawada, Hirotaka	CA	IAC-19.C1.2.4
Sawada, Hirotaka	CA	IAC-19.A3.4A.3
Sawada, Hirotaka	CA	IAC-19.A3.4A.5
Sawada, Hirotaka	A	IAC-19.A3.4B.1
Sawada, Kenichiro	CA	IAC-19.C2.7.8
Sawyer, Aenor	CA	IAC-19.A1.3.16
Sawyer, Aenor	CA	IAC-19.A1.4.9
Saylan, Sueda	CA	IAC-19.C2.6.8
Scanlan, Joel	A	IAC-19.D5.4.3
Scarcia, Michael	A	IAC-19.A6.5.10
Scatena, Lorenzo	A	IAC-19.E6.1.8
Schaefer, Edward	A	IAC-19.C2.4.2
Schaefer, Edward	CA	IAC-19.C2.4.3
Schaefer, Edward	CA	IAC-19.C2.IP.11
Schaefer, Edward	CA	IAC-19.D1.5.3
Schaefer, Konstantin	CA	IAC-19.B4.4.6
Schaefer, Matthew	A	IAC-19.E7.3.3
Schaffer, Mark	CA	IAC-19.D3.2A.9
Schalkwyk, James	CA	IAC-19.D4.4.8
Schalkwyk, James	CA	IAC-19.D4.4.10
Schanz, Lars	CA	IAC-19.A3.3A.11
Schanz, Lars	CA	IAC-19.C4.4.11
Schanz, Lars	CA	IAC-19.E3.IP.4
Schanz, Lars	CA	IAC-19.C2.7.2
Schanz, Lars	CA	IAC-19.A5.4-D2.8.9
Scharnagl, Julian	CA	IAC-19.B6.IP.7
Scharnagl, Julian	CA	IAC-19.B4.7.9
Scharnagl, Julian	A	IAC-19.C1.8.9
Scharnagl, Julian	CA	IAC-19.C1.8.11
Schaub, Hanspeter	CA	IAC-19.C1.5.8
Schauer, Katherine	CA	IAC-19.E1.5.4
Schauer, Katherine	CA	IAC-19.B2.7.10
Schaus, Volker	A	IAC-19.B6.2.2
Schaus, Volker	CA	IAC-19.A6.2.5
Schaus, Volker	CA	IAC-19.A6.4.6

Name	Role	Paper
Schaus, Volker	CA	IAC-19.E7.7.4
Schechner, Yoav	CA	IAC-19.D1.6.3
Scheeres, Daniel	CA	IAC-19.A6.5.7
Scheeres, Daniel	A	IAC-19.A3.4A.7
Scheeres, Daniel	CA	IAC-19.C1.6.8
Scheiderich, Kathleen	CA	IAC-19.A1.7.16
Schell, Tyler	CA	IAC-19.D2.5.4
Schelle, Simon	CA	IAC-19.D4.3.12
Schena, Vincenzo	CA	IAC-19.B6.2.12
Schenk, Alexander	CA	IAC-19.A3.IP.22
Schenker, Eran	CA	IAC-19.A5.2.13
Scheper, Marc	CA	IAC-19.D1.2.1
Scherrmann, Marcel	A	IAC-19.A3.2A.4
Schervan, Thomas A.	CA	IAC-19.D3.2B.6
Schettino, Giulia	CA	IAC-19.A6.2.5
Schettino, Giulia	CA	IAC-19.A6.4.6
Schettino, Giulia	CA	IAC-19.A6.6.4
Schiaffino, Marco	CA	IAC-19.A6.9.9
Schiel, Jeremy	CA	IAC-19.B3.3.10
Schiel, Jeremy	A	IAC-19.A6.6.2
Schildknecht, Thomas	CA	IAC-19.A6.1.4
Schildknecht, Thomas	CA	IAC-19.A6.1.8
Schildknecht, Thomas	CA	IAC-19.A6.IP.21
Schildknecht, Thomas	CA	IAC-19.A6.9.2
Schill, Fabian	CA	IAC-19.D1.3.3
Schill, Fabian	CA	IAC-19.E2.3-GTS.4.10
Schiller, Aschley	CA	IAC-19.A6.8.9
Schilling, Klaus	CA	IAC-19.B2.1.11
Schilling, Klaus	CA	IAC-19.B4.2.14
Schilling, Klaus	CA	IAC-19.B4.3.5
Schilling, Klaus	A	IAC-19.E1.4.2
Schilling, Klaus	CA	IAC-19.B6.IP.7
Schilling, Klaus	A	IAC-19.B4.7.9
Schilling, Klaus	CA	IAC-19.C1.8.5
Schilling, Klaus	CA	IAC-19.C1.8.9
Schilling, Klaus	CA	IAC-19.C1.8.11
Schilling, Klaus	A	IAC-19.D1.6.3
Schimmerohn, Martin	A	IAC-19.A6.2.1
Schimmerohn, Martin	CA	IAC-19.A6.3.10
Schimmerohn, Martin	CA	IAC-19.B4.4.6
Schinaia, Virginia	CA	IAC-19.B1.3.2
Schingler, Jessy Kate	A	IAC-19.E7.IP.22
Schirru, Luca	CA	IAC-19.A6.IP.7
Schirru, Luca	CA	IAC-19.A6.7.9
Schlacht, Irene Lia	CA	IAC-19.E5.IP.5
Schlatter, Nick	CA	IAC-19.B1.4.6
Schlechtriem, Stefan	CA	IAC-19.C4.1.3
Schlegelmilch, Barret	CA	IAC-19.B3.5.6
Schlegelmilch, Barret	CA	IAC-19.B6.IP.6
Schlenker, Lauren	CA	IAC-19.A3.IP.19
Schleutker, Thorn	CA	IAC-19.A6.4.6
Schlotterer, Markus	CA	IAC-19.C1.8.4
Schlutz, Juergen	A	IAC-19.E3.2.5
Schlüter, Lukas	CA	IAC-19.A3.2C.3
Schmaus, Peter	CA	IAC-19.A5.3-B3.6.2
Schmid, Eric	A	IAC-19.C2.IP.20
Schmid, Florian	CA	IAC-19.D4.3.12
Schmid, Michael	CA	IAC-19.D2.3.2
Schmidt, Christopher	CA	IAC-19.B4.3.2
Schmidt, Christopher	CA	IAC-19.B4.6A.1
Schmidt, Cynthia	A	IAC-19.E1.IP.31
Schmidt, George	A	IAC-19.C4.3.1
Schmidt, George	A	IAC-19.C4.4.2
Schmidt, Gregory	CA	IAC-19.A3.2B.10
Schmidt, Gregory	CA	IAC-19.E1.IP.31
Schmidt, Jens	A	IAC-19.C4.IP.21
Schmidt, Lars	CA	IAC-19.D6.1.8
Schmidt, Marco	A	IAC-19.B5.1.2
Schmidt, Marco	A	IAC-19.B2.3.12
Schmidt, Nikola	CA	IAC-19.E7.3.13
Schmidt, Nikola	CA	IAC-19.E7.IP.20
Schmidt, Nikola	CA	IAC-19.D4.5.9
Schmidt-Tedd, Bernhard	CA	IAC-19.E3.IP.4
Schmidtke, Nicholas	A	IAC-19.D3.2B.8
Schmierer, Christian	CA	IAC-19.D2.7.8
Schmisser, Roseline	CA	IAC-19.A3.4B.8
Schmitt, Dirk-Roger	A	IAC-19.B2.2.10
Schmitt, Dirk-Roger	A	IAC-19.E6.3.13
Schmitt, Harrison	CA	IAC-19.A3.1.6
Schmitt, Mathieu	CA	IAC-19.B6.3.5
Schmitt, Mathieu	A	IAC-19.B6.3.11
Schmitz, Enzo	CA	IAC-19.A3.IP.20
Schmitz, Nicole	CA	IAC-19.A3.4A.6
Schmitz, Nicole	CA	IAC-19.B4.8.12
Schmitz, Nicole	CA	IAC-19.A3.4B.2
Schneider, Scott	A	IAC-19.E3.3.7
Schneider, Victor	A	IAC-19.A1.2.1
Schneider, Victor	A	IAC-19.A1.3.6
Schneider, Victor	A	IAC-19.A1.4.3
Schneider, Victor	A	IAC-19.A1.4.4
Schneider, Walter	A	IAC-19.A1.7.1
Schnitzler, Bastien	CA	IAC-19.C4.6.2
Schnorr, Eduard	CA	IAC-19.D2.6.9
Schoen, Andreas	CA	IAC-19.B3.3.1
Schoenrock, Britt	CA	IAC-19.A1.4.14
Schoenstein, Nicole	CA	IAC-19.D1.4B.3
Schoettler, Christian	CA	IAC-19.D1.6.8
Schonberg, William P.	A	IAC-19.A6.3.1
Schoonejans, Philippe	CA	IAC-19.B3.1.7
Schoonejans, Philippe	CA	IAC-19.A5.1.3
Schoonejans, Philippe	CA	IAC-19.B3.7.4
Schor, Dario	CA	IAC-19.E1.IP.26
Schrama, Ernst	CA	IAC-19.A6.9.3
Schrandt, Friedrich	CA	IAC-19.A3.4B.9
Schreier, Gunter	CA	IAC-19.B5.2.3
Schroeder, Jan Walter	CA	IAC-19.E1.IP.4
Schroeder, Jan Walter	A	IAC-19.A2.5.10
Schroeder, Starr	CA	IAC-19.B3.2.6
Schrogl, Kai-Uwe	CA	IAC-19.E7.4.9
Schrogl, Kai-Uwe	CA	IAC-19.E7.IP.14
Schröder, Kai-Uwe	CA	IAC-19.C2.3.8
Schröder, Kai-Uwe	CA	IAC-19.C2.6.4
Schröder, Kai-Uwe	CA	IAC-19.D3.2B.6
Schröder, Silvio	A	IAC-19.A3.IP.22
Schröder, Susanne	CA	IAC-19.A3.4B.9
Schröder, Valerie	CA	IAC-19.A1.1.9
Schubert, Daniel	CA	IAC-19.A1.7.5
Schubert, Daniel	CA	IAC-19.A1.7.12
Schubert, Kathleen	CA	IAC-19.A5.4-D2.8.2
Schubert, Manuel	CA	IAC-19.A6.1.9
Schuh, Susan	CA	IAC-19.B3.5.3
Schuldt, Thilo	A	IAC-19.A2.1.2
Schuler, Jason	A	IAC-19.A3.IP.11
Schultz, Lori	CA	IAC-19.E5.4.11
Schulze, Daniel	A	IAC-19.B6.2.8
Schurig, Christian	CA	IAC-19.B6.2.2
Schwab, David	CA	IAC-19.A6.9.6
Schwadron, Nathan	CA	IAC-19.A1.5.2
Schwartz, Mariah	A	IAC-19.C2.6.3
Schwartz, Stephen	A	IAC-19.A2.5.2
Schwarz, René	A	IAC-19.D2.5.3
Schwarz, René	A	IAC-19.C1.IP.5
Schwarz, Robert	CA	IAC-19.B2.4.3
Schweigert, Robin	CA	IAC-19.E1.IP.24
Schweitzer, Caroline	CA	IAC-19.B4.4.6
Schweizer, Jonas	CA	IAC-19.C4.6.2
Schwieterman, Edward	CA	IAC-19.A4.1.17
Schäfer, Frank	CA	IAC-19.A6.2.1
Schäfer, Frank	CA	IAC-19.B4.4.6
SCIGLIANO, ROBERTO	CA	IAC-19.D2.5.6
Scimemi, Sam	A	IAC-19.B3.2.1
Sciortino, Giacomo Primo	A	IAC-19.E1.5.2
Sciortino, Giacomo Primo	A	IAC-19.E3.3.11
Scipioni, Manuele	A	IAC-19.D1.2.6
Scire, Gioacchino	CA	IAC-19.B4.6A.6
Sciscione, Giuseppe	CA	IAC-19.E2.4.6
Sciti, Diletta	CA	IAC-19.C4.5.7
Scolese, Christopher	CA	IAC-19.D1.5.10
Scott, John	A	IAC-19.C4.6.8
Scoubeau, Mehdi	CA	IAC-19.A2.5.4

Name	Role	Paper
Seabra, Eurico	CA	IAC-19.C2.9.3
Searby, Nancy D	CA	IAC-19.B1.5.1
Searle, Tim	CA	IAC-19.D2.7.11
Seboldt, Wolfgang	CA	IAC-19.B4.8.12
Sedlmayr, Hans-Jürgen	CA	IAC-19.D1.6.8
Sedwick, Raymond	CA	IAC-19.D1.4A.4
Seedhouse, Erik	A	IAC-19.A1.2.11
Seedhouse, Erik	A	IAC-19.B6.3.6
Seefeldt, Patric	CA	IAC-19.D2.3.2
Seefeldt, Patric	CA	IAC-19.B4.6A.4
Seefeldt, Patric	CA	IAC-19.B4.8.12
Seelbinder, David	CA	IAC-19.C1.IP.5
Seelbinder, David	CA	IAC-19.C1.8.4
Seelmann, Jürgen	CA	IAC-19.B6.1.11
Seffinga, Vincent	A	IAC-19.E7.3.1
Segura Hernandez, Francisco Javier	A	IAC-19.B5.1.8
Segura Munoz, Sergi	CA	IAC-19.C1.1.9
Seifert, Bernhard	CA	IAC-19.C4.8-B4.5A.13
Seitzer, Patrick	A	IAC-19.A6.1.4
Seitzer, Patrick	CA	IAC-19.B2.2.8
Seitzer, Patrick	CA	IAC-19.A6.10-B4.10.2
Selig, Hanns	CA	IAC-19.A3.IP.22
Selig, Hanns	A	IAC-19.A2.5.5
Sellamuthu, Harishkumar	A	IAC-19.A6.9.10
Selmo, Antonio	CA	IAC-19.C4.8-B4.5A.5
Selvam, Ankitha	A	IAC-19.C3.2.12
Selvam, Ankitha	CA	IAC-19.B4.6B.12
Semenkin, Alexander	CA	IAC-19.E3.IP.4
Semenkin, Alexander V.	CA	IAC-19.A3.3A.11
Semenkin, Alexander V.	CA	IAC-19.C4.4.11
Semenkin, Alexander V.	CA	IAC-19.C2.7.2
Semenkin, Alexander V.	CA	IAC-19.A5.4-D2.8.9
Semones, Edward J.	CA	IAC-19.A1.5.5
Semper, Sean	CA	IAC-19.B3.4-B6.4.2
Senba, Atsuhiko	CA	IAC-19.C2.3.9
Senba, Atsuhiko	CA	IAC-19.C2.IP.17
Senba, Atsuhiko	A	IAC-19.C2.9.1
Sengupta, Mridul	CA	IAC-19.C2.4.7
Sennersten, Charlotte	CA	IAC-19.D4.5.16
Senthilkumar, Megala	CA	IAC-19.E3.1.3
Seo, Mansoo	CA	IAC-19.D2.2.9
Seo, Mingyo	A	IAC-19.A3.2B.8
Seo, Sally	CA	IAC-19.B4.1.1
Seoane Purrinos, Laura	CA	IAC-19.A3.3B.11
Sepulveda, Juan Carlos	CA	IAC-19.B5.1.3
Serbin, Viktor	CA	IAC-19.C4.4.4
Serphos, Reuben	CA	IAC-19.E1.IP.4
Serra, Giampaolo	CA	IAC-19.A7.2.3
Serralta, Pablo	CA	IAC-19.E2.1.5
Serralta, Pablo	A	IAC-19.A2.IP.6
Serralta, Pablo	CA	IAC-19.C2.IP.18
Serrano, Daniel	CA	IAC-19.B4.IP.24
Serrano, Ignacio	CA	IAC-19.E2.1.5
Serreau, Robin	CA	IAC-19.D2.IP.6
Sestak, David	CA	IAC-19.A6.1.3
Seto, Yuki	CA	IAC-19.A6.5.2
Settanni, Antonio	A	IAC-19.C2.2.1
Sette, Serena	CA	IAC-19.D1.1.7
Setty, Srinivas J.	A	IAC-19.C1.3.10
Setty, Srinivas J.	CA	IAC-19.A6.9.3
Sevastiyanov, Nikolay	CA	IAC-19.B3.3.5
Sevastiyanov, Nikolay	CA	IAC-19.A5.1.5
Sevastiyanov, Nikolay	CA	IAC-19.B3.4-B6.4.1
Sevilla, Erika	CA	IAC-19.B4.6A.7
Sha, Cuilee	A	IAC-19.A1.3.17
Shah, Jahnavi	A	IAC-19.A7.2.6
Shah Khadri, Syed Peer Mohamed	CA	IAC-19.E6.1.11
Shah Khadri, Syed Peer Mohamed	CA	IAC-19.C1.IP.17
Shah Khadri, Syed Peer Mohamed	CA	IAC-19.A6.9.10
Shah Khadri, Syed Peer Mohamed	CA	IAC-19.C1.9.4
Shaikh, Juber	CA	IAC-19.E2.4.7
Shaikh, Juber	CA	IAC-19.E2.4.8
Shaikh, Muhammad Mubasshir	CA	IAC-19.A3.3A.10
Shaji, A	CA	IAC-19.C4.5.4
Shams, Javad	A	IAC-19.A3.3B.5
Shams, Javad	A	IAC-19.C1.IP.6
Shamsul, Aqeel	A	IAC-19.A2.5.3
Shancong, Zhang	CA	IAC-19.A2.5.11
Shani, Raz	A	IAC-19.B2.2.6
Shar, Manny	A	IAC-19.E6.1.1
Shar, Manny	A	IAC-19.E6.2.2
Sharf, Inna	CA	IAC-19.A6.5.5
Sharif, Tausif	CA	IAC-19.B2.IP.3
Sharma, Abhijith	CA	IAC-19.E2.4.9
Sharma, Anirudh N	A	IAC-19.A6.IP.17
Sharma, Anirudh N	A	IAC-19.B1.IP.14
Sharma, Ram Krishan	CA	IAC-19.A6.9.10
Sharma, Vaibhav	CA	IAC-19.C2.7.7
Sharma, Vikrant	CA	IAC-19.A5.IP.9
Sharpe, Carla	A	IAC-19.A7.1.7
Sharpe, Carla	A	IAC-19.E3.3.6
Sharpe, Carla	A	IAC-19.E6.5-GTS.1.10
Shaw, Harry	CA	IAC-19.B2.1.10
Shaw, Harry	CA	IAC-19.B2.2.5
Shaw, Harry	A	IAC-19.E1.5.4
Shaw, Harry	CA	IAC-19.B6.3.12
Shaw, Harry	A	IAC-19.B2.7.11
Shaw, Kyle	CA	IAC-19.E2.3-GTS.4.3
Shaw, Martin	CA	IAC-19.B4.3.3
Shaw, Niamh	A	IAC-19.E1.1.7
Shawyer, Roger	A	IAC-19.C4.10.14
Shcheglov, Georgy	A	IAC-19.A6.6.1
Shcheglov, Georgy	CA	IAC-19.B4.IP.9
Shcherbak, Danylo	CA	IAC-19.C4.4.4
Sheehan, J.P.	CA	IAC-19.A6.2.4
Sheerin, Todd F.	A	IAC-19.A5.4-D2.8.3
Shehryar, Usman	A	IAC-19.B2.1.5
Sheini Dashtgol, Farnoosh	CA	IAC-19.D4.2.8
Sheini Dashtgol, Farnoosh	CA	IAC-19.D3.IP.3
Shekoofa, Omid	A	IAC-19.C3.2.6
Shelfer, Tad	CA	IAC-19.A1.5.5
Shen, Xuhui	CA	IAC-19.B1.1.9
Shepanek, Marc	CA	IAC-19.A1.4.3
Shepanek, Marc	CA	IAC-19.A1.4.4
Shergill, Satinder	A	IAC-19.D3.2A.8
Shergill, Satinder	A	IAC-19.D4.5.14
Sheridan, Simon	CA	IAC-19.A3.2C.6
Sherwood, Brent	CA	IAC-19.A3.1.6
Sherwood, Brent	CA	IAC-19.B6.2.9
Sherwood, Brent	CA	IAC-19.C3.2.9
Sherwood, Brent	CA	IAC-19.D3.2A.2
Sherwood, Brent	CA	IAC-19.D3.2A.4
Shestopyorov, Aleksey	CA	IAC-19.C1.5.9
Shet, Chaitra	CA	IAC-19.E2.4.7
Shet, Chaitra	CA	IAC-19.E2.4.8
Shetty, Krithi D	CA	IAC-19.B2.5.10
Shevtsova, Valentina	A	IAC-19.A2.4.3
Shi, Wei	CA	IAC-19.B2.IP.9
Shi, Zhixiong	CA	IAC-19.B6.1.4
Shibata, Naoki	CA	IAC-19.C1.2.4
Shiga, Masanori	CA	IAC-19.C4.1.7
SHIKAR, ALON	CA	IAC-19.A5.2.13
Shim, Edward	CA	IAC-19.C2.IP.16
Shim, Jin Hyung	CA	IAC-19.A2.IP.7
Shim, Jin-hyung	CA	IAC-19.A2.7.7
Shimada, Takanobu	CA	IAC-19.A3.2A.6
Shimagaki, Mitsuru	CA	IAC-19.C4.1.11
Shimagaki, Mitsuru	A	IAC-19.C4.3.2
Shimhanda, Senior	A	IAC-19.E3.IP.2
Shimoda, Kazuya	CA	IAC-19.C1.5.12
Shimoda, Yuya	CA	IAC-19.B4.6B.14
Shimoyama, Hajime	CA	IAC-19.E5.3.6
Shin, Dongyoon	A	IAC-19.D2.7.5
Shinohara, Ryuu	CA	IAC-19.A6.2.11
Shintani, Mihoko	A	IAC-19.E7.7.6
Shiraishi, Hiroaki	CA	IAC-19.A3.2A.6
Shiraiwa, Daijiro	A	IAC-19.C4.3.10
Shirakawa, Masaki	CA	IAC-19.B3.3.1
SHIRAKI, Nagisa	CA	IAC-19.A1.IP.2
Shirasawa, Yoji	CA	IAC-19.A3.2A.6

Name	Role	Paper
Shirasawa, Yoji	CA	IAC-19.A3.2B.9
Shitara, Shoichi	A	IAC-19.C2.2.9
Shkarayev, Sergey	CA	IAC-19.B4.8.13
Shkolnik, Evgenya	CA	IAC-19.B4.IP.35
Shoer, Joseph	A	IAC-19.B4.8.6
Sholes, Darren	CA	IAC-19.B4.4.6
Sholmin, Andrey	CA	IAC-19.A6.5.6
Shonibare, Tayo	A	IAC-19.B2.IP.3
Shore, Jason	A	IAC-19.C2.2.6
Shore, Jason	CA	IAC-19.A6.6.6
Shrestha, Suravi	CA	IAC-19.E5.4.11
Shrivastava, Shashank	CA	IAC-19.B4.6B.12
Shteinman, David	A	IAC-19.A6.7.4
Shu, Anton	CA	IAC-19.D1.6.8
Shuai, Liu	CA	IAC-19.C4.9.13
Shuch, H. Paul	A	IAC-19.A4.2.3
Shulga, Volodymyr	CA	IAC-19.C4.1.6
Shull, Sarah	CA	IAC-19.D2.9-D6.2.3
Shvartzberg, Jonathan	CA	IAC-19.A5.2.13
Shvirkina, Olga	CA	IAC-19.C1.IP.3
Shymyr, Manap	CA	IAC-19.B4.6A.10
Shymyr, Manap	A	IAC-19.B4.IP.36
Shynkarenko, Olexiy	A	IAC-19.C4.3.8
Shynkarenko, Olexiy	A	IAC-19.C4.9.8
Shyong, Wen-Jong	CA	IAC-19.A3.5.1
Si, Guolei	CA	IAC-19.D5.IP.5
Siarov, Stefan	CA	IAC-19.D1.IP.5
Sibilia, Maria	CA	IAC-19.A1.4.15
Siddall, Michael	CA	IAC-19.E5.IP.10
Siddiqi, Afreen	A	IAC-19.B4.1.21
Siddiqi, Asif	CA	IAC-19.E4.1.9
Sidorov, Alexey	A	IAC-19.C4.IP.35
Siebrits, André	CA	IAC-19.D4.2.1
Siebrits, André	CA	IAC-19.E3.1.4
Siebrits, André	CA	IAC-19.E5.2.6
Siebrits, André	CA	IAC-19.E1.9.15
Sieder-Katzmann, Jan	A	IAC-19.C4.10.8
Siegler, Nicholas	CA	IAC-19.A7.1.5
Siemion, Andrew	A	IAC-19.A4.1.1
Siemion, Andrew	CA	IAC-19.A4.1.2
Siemion, Andrew	CA	IAC-19.A4.1.3
Siemion, Andrew	A	IAC-19.A4.1.5
Siemion, Andrew	CA	IAC-19.A4.1.16
Siemion, Andrew	CA	IAC-19.A4.1.17
Sierks, Holger	CA	IAC-19.A3.4B.5
Siggel, Martin	CA	IAC-19.A6.IP.21
Sijbers, Jan	CA	IAC-19.A1.2.4
Sijbers, Jan	CA	IAC-19.A1.2.5
Silha, Jiri	A	IAC-19.A6.1.6
Silimon-Hill, Denise	CA	IAC-19.E3.2.10
Silva, Herbert	CA	IAC-19.D1.4B.3
Silva, Jose Wagner da	CA	IAC-19.D1.4A.5
Silva Costa, Amauri	CA	IAC-19.D1.5.7
Silva-Martinez, Jackelynne	A	IAC-19.D1.4B.3
Silvestri, Riccardo	CA	IAC-19.B4.5.11
Silvestrini, Stefano	CA	IAC-19.C1.3.4
Silvestrini, Stefano	CA	IAC-19.C1.5.4
Silvestrini, Stefano	A	IAC-19.B4.IP.33
Silvestroni, Laura	CA	IAC-19.C4.5.7
Simanovskii, Ilya	A	IAC-19.A2.2.2
Simberg, Rand	A	IAC-19.E7.5.7
Siminski, Jan	CA	IAC-19.A6.9.2
Simmons, Kevin	A	IAC-19.E1.2.2
Simon, Xavier	A	IAC-19.B3.7.5
Simone, Domenico	CA	IAC-19.C4.3.8
Simonetti, Simone	CA	IAC-19.B4.2.8
Simonini, Luca	CA	IAC-19.B6.2.12
Simonini, Luca	CA	IAC-19.C1.5.5
Simonini, Luca	CA	IAC-19.C1.8.4
Simonsen, Lisa	A	IAC-19.A1.5.6
Simpson, Christopher	A	IAC-19.B6.1.5
Sims, Michael	CA	IAC-19.A3.1.6
Sindoni, Giampiero	CA	IAC-19.A2.1.4
Sindoni, Giampiero	CA	IAC-19.C2.1.7
Singam, Caitlyn	A	IAC-19.A3.IP.19

Name	Role	Paper
Singer, Christian	CA	IAC-19.A1.4.15
Singer, Jody	A	IAC-19.D2.9-D6.2.2
Singh, Abhee	CA	IAC-19.E1.1.3
Singh, Aishwerya	CA	IAC-19.A7.1.8
Singh, Anand Kumar	CA	IAC-19.D4.1.10
Singh, Anand Kumar	A	IAC-19.D4.1.14
Singh, Anand Kumar	CA	IAC-19.A4.2.13
Singh, Jake	A	IAC-19.B4.9-GTS.5.14
Singh, Nihal	A	IAC-19.C3.IP.6
Singh, Sandeep	A	IAC-19.C1.1.11
Singh, Vishal	A	IAC-19.A7.1.8
Singh-Derewa, Chrishma	CA	IAC-19.B3.8-GTS.2.9
Singla, Puneet	CA	IAC-19.A6.9.6
Sinha Roy, Sonali	A	IAC-19.D2.3.4
Sinha Roy, Sonali	A	IAC-19.C4.2.6
Sinitsyn, Valentin	CA	IAC-19.A1.2.4
Sinitsyn, Valentin	CA	IAC-19.A1.2.5
Sinn, Thomas	A	IAC-19.D2.3.2
Sinn, Thomas	A	IAC-19.A6.10-B4.10.6
Sippel, Martin	CA	IAC-19.D2.3.10
Sippel, Martin	CA	IAC-19.D2.4.2
Sippel, Martin	A	IAC-19.D2.4.8
Sippel, Martin	A	IAC-19.D2.5.10
Siraj, Aimal	A	IAC-19.B2.3.7
Sirek, Adam	CA	IAC-19.A1.3.14
Sirenko, Mikhail	CA	IAC-19.D1.1.4
Sirigu, Stefano	CA	IAC-19.A2.6.9
Sirikan, Nityaporn	CA	IAC-19.E1.IP.34
Sirikan, Nityaporn	A	IAC-19.A3.2C.9
Sirisombat, Thakdanai	A	IAC-19.A2.3.11
Sirorattanakul, Krittanon	CA	IAC-19.B1.1.11
Sirurmath, Srilakshmi U	A	IAC-19.B2.5.10
Sisk, Morgan R.	CA	IAC-19.A1.6.2
Sisto, Renata	CA	IAC-19.A1.2.8
Sitepu, Elioenai	CA	IAC-19.A2.1.9
Sitnikova, Anna	A	IAC-19.E5.3.10
Siyuan, Chen	CA	IAC-19.C2.4.12
Skalden, Jonathan	CA	IAC-19.D1.3.5
Skalden, Jonathan	CA	IAC-19.B4.IP.12
Skinner, Mark	A	IAC-19.A6.7.5
Skoulidou, Despoina	CA	IAC-19.A6.4.6
Skoulidou, Despoina	CA	IAC-19.A6.6.4
Skrypnyk, Ilja	CA	IAC-19.C3.IP.3
Slane, Frederick	A	IAC-19.E3.6.6
Sleap, Greg	CA	IAC-19.A4.1.2
Slenzka, Klaus	CA	IAC-19.A1.6.3
Slenzka, Klaus	CA	IAC-19.A1.7.4
Sloan, John	CA	IAC-19.D6.1.2
Smisek, Michal	CA	IAC-19.A3.4B.8
Smith, Brenton	A	IAC-19.A6.10-B4.10.4
Smith, Brian	CA	IAC-19.B4.2.3
Smith, Craig	CA	IAC-19.A6.4.8
Smith, David Alan	CA	IAC-19.B4.5.5
Smith, David H.	CA	IAC-19.A7.1.1
Smith, Jonathan	CA	IAC-19.A3.IP.11
Smith, Lesley Jane	CA	IAC-19.E3.4.12
Smith, Marshall	CA	IAC-19.B3.1.8
Smith, Michael	CA	IAC-19.A1.1.2
Smith, Miles	CA	IAC-19.A3.1.6
Smith, Miles	CA	IAC-19.B6.2.9
Smith, Miles	CA	IAC-19.C3.2.9
Smith, Miles	CA	IAC-19.D3.2A.2
Smith, Miles	CA	IAC-19.D3.2A.4
Smith, Nathan	CA	IAC-19.A1.1.4
Smith, Nathan	A	IAC-19.A1.1.5
Smith, Nicholas	CA	IAC-19.E2.3-GTS.4.8
Smith, Phil	A	IAC-19.D4.1.3
Smith, Phil	CA	IAC-19.E3.3.1
Smith, R. Marshall	A	IAC-19.A3.1.2
Smith, R. Marshall	CA	IAC-19.B3.1.7
Smith, Sonya	CA	IAC-19.A1.5.2
Snodgrass, Colin	CA	IAC-19.C1.IP.7
Snodgrass, Colin	CA	IAC-19.A3.4B.5
Soares, Carlos	A	IAC-19.D5.3.9
Soares, Carlos	CA	IAC-19.D5.3.11

Name	Role	Paper
Soares, Carlos	A	IAC-19.D5.3.12
Soares, Tiago	CA	IAC-19.A6.6.3
Sobiecki, Mateusz	CA	IAC-19.B4.9-GTS.5.5
Sobiecki, Mateusz	CA	IAC-19.C2.IP.21
Sobrino, Marco	CA	IAC-19.B4.6B.3
Sochacki, Mateusz	CA	IAC-19.D1.2.5
Sode, Miki	A	IAC-19.D4.2.4
Soeder, James	CA	IAC-19.C3.4.3
Sohail, Muhammad Amjad	A	IAC-19.C4.9.4
Sojka, Weronika	CA	IAC-19.E5.3.11
Solanellas, Arnau	CA	IAC-19.B4.6B.3
Solari, Marco	CA	IAC-19.D2.5.3
Solbiati, Sarah	A	IAC-19.A1.2.3
Soldini, Stefania	CA	IAC-19.C1.3.7
Soler-Luna, Adrian	CA	IAC-19.A1.6.2
Soli, Luca	CA	IAC-19.B1.2.8
Soli, Luca	CA	IAC-19.B4.7.3
Soliz, Jorge	CA	IAC-19.B4.1.8
Solodukhin, Alexander	CA	IAC-19.A5.4-D2.8.9
Solodukhin, Alexander E.	CA	IAC-19.A3.3A.11
Solodukhin, Alexander E.	CA	IAC-19.C2.7.2
Solodukin, Alexander E.	CA	IAC-19.C4.4.11
Solomakha, Andrii	CA	IAC-19.A1.IP.11
Solomon, Benjamin John	CA	IAC-19.A6.9.10
Solovyeva, Lilia	CA	IAC-19.C4.6.2
Soltanalian, Mojtaba	CA	IAC-19.B2.2.5
Soltanalian, Mojtaba	CA	IAC-19.B2.7.11
Soludukhin, Alexander E.	CA	IAC-19.E3.IP.4
Som, Sanjoy	CA	IAC-19.A4.1.17
Soma, Tomoya	CA	IAC-19.C4.1.7
Sommer, Bernd	CA	IAC-19.C2.7.2
Sommer, Jan	CA	IAC-19.D5.1.2
Sommer, Jan	A	IAC-19.D5.1.10
Sondhiya, Shubhank	A	IAC-19.A1.6.9
Song, Guangming	CA	IAC-19.A6.3.2
Song, Guangming	A	IAC-19.A6.3.5
Song, Guangming	CA	IAC-19.A6.3.6
Song, Qiang	CA	IAC-19.A6.IP.15
Song, You	A	IAC-19.B5.1.7
Sooy, Peter	A	IAC-19.E1.7.5
Sorek Abramovich, Reut	CA	IAC-19.A5.2.13
Sorge, Marlon	A	IAC-19.A6.3.4
Sorge, Marlon	CA	IAC-19.A6.4.7
Soria Salinas, Álvaro Tomás	A	IAC-19.A2.3.8
Sorice Genaro, Andreia Fatima	A	IAC-19.D1.4A.5
Sorokin, Andrey	CA	IAC-19.A1.7.10
Sorokin, Igor V.	CA	IAC-19.B3.3.1
Sorokin, Igor V.	A	IAC-19.B3.3.5
Sorokin, Igor V.	CA	IAC-19.B3.5.2
Sorokin, Vladimir	CA	IAC-19.B3.4-B6.4.6
Sors Raurell, Daniel	A	IAC-19.B4.IP.18
Soshkin, Maksim	CA	IAC-19.A6.8.9
Sotin, Christophe	CA	IAC-19.A3.5.5
Soucek, Alexander	CA	IAC-19.E7.3.5
Souhair, Nabil	A	IAC-19.B4.6A.11
Soulage, Michael	CA	IAC-19.C2.6.7
Sousa, Duarte	CA	IAC-19.A2.3.3
Sousa Silva, Priscilla	A	IAC-19.C1.3.3
Southern, Theodore	A	IAC-19.B3.7.11
Southworth, Richard	CA	IAC-19.D5.3.3
Southworth, Richard	CA	IAC-19.B6.3.1
Souza, Kesiany	CA	IAC-19.C4.3.8
Souza, Kesiany	A	IAC-19.A2.2.6
Souza, Leonardo	A	IAC-19.B4.1.10
Souza, Leonardo	CA	IAC-19.E1.2.7
Souza, Leonardo	CA	IAC-19.B4.IP.5
Souza de Abreu, Mirela	CA	IAC-19.E1.IP.4
Sowers, George	CA	IAC-19.A3.2C.4
Spackman, Christy	CA	IAC-19.E1.7.3
Sparkman, Ron	CA	IAC-19.E1.IP.32
Sparta, Joseph	CA	IAC-19.A3.3B.6
Spassova, Simona	A	IAC-19.E7.2.9
Speaks, Seth	CA	IAC-19.A6.2.9
Spears, Shelley	CA	IAC-19.E1.5.3
Spedding, Chris	A	IAC-19.E5.IP.4

Name	Role	Paper
Spel, Martin	CA	IAC-19.A6.4.10
Spena, Paola	CA	IAC-19.D2.5.6
Spence, Harlan	CA	IAC-19.A1.5.2
Spencer, David	CA	IAC-19.B4.3.11
Spencer, David	CA	IAC-19.B4.IP.23
Spencer, David	CA	IAC-19.C4.8-B4.5A.2
Speretta, Stefano	CA	IAC-19.D1.1.6
Speretta, Stefano	CA	IAC-19.B4.7.12
Spiegel, Michael	A	IAC-19.C2.1.8
Spietz, Peter	CA	IAC-19.B4.8.12
Spiller, Dario	CA	IAC-19.B5.1.4
Spiller, Dario	A	IAC-19.C1.6.11
Spiller, Dario	CA	IAC-19.B4.IP.29
Spinale, April	A	IAC-19.A2.6.6
Spirito, Germana	CA	IAC-19.D6.3.11
Spivey, Reggie	CA	IAC-19.A2.5.9
Spring, Justin	CA	IAC-19.A3.3B.6
Springer, Patrick	CA	IAC-19.D1.3.5
Sprits, Yuri	CA	IAC-19.A1.5.11
Sproewitz, Tom	CA	IAC-19.D2.3.2
Sproewitz, Tom	CA	IAC-19.B4.8.12
Squire, Jared	CA	IAC-19.C4.4.13
Srama, Ralf	CA	IAC-19.D1.6.5
Sreeram, G C	CA	IAC-19.B1.5.5
Sridharan, Saish	A	IAC-19.B4.IP.26
Srikar, Mardi	CA	IAC-19.D5.4.4
Srinivas, Abhishek	CA	IAC-19.D1.4A.6
Srivastava, Archit	CA	IAC-19.B2.5.10
St-Pierre, Luc	CA	IAC-19.E3.1.1
St-Pierre, Luc	CA	IAC-19.B3.3.2
St. Germain, Karen	A	IAC-19.B1.1.3
St. Germain, Karen	A	IAC-19.B1.2.1
Staab, Daniel	CA	IAC-19.C4.8-B4.5A.10
Staats, Kai	A	IAC-19.E1.IP.28
Staats, Kai	CA	IAC-19.A2.5.10
Stabile, Alessandro	A	IAC-19.C2.3.5
Stafford, Matthew	CA	IAC-19.D3.2A.10
Stahn, Alexander Christoph	A	IAC-19.A1.1.1
Stahn, Alexander Christoph	CA	IAC-19.A1.1.2
Stallo, Cosimo	CA	IAC-19.B2.6.2
Stanbridge, Dale	CA	IAC-19.C1.2.11
Standbridge, Sean	CA	IAC-19.C4.1.13
Stankovic, Aleksandra	A	IAC-19.A1.IP.4
Stanton, Richard	A	IAC-19.A4.1.8
Stappert, Sven	A	IAC-19.D2.3.10
Stappert, Sven	A	IAC-19.D2.4.2
Stappert, Sven	CA	IAC-19.D2.4.8
Starke, Patrick	A	IAC-19.D2.5.7
Stausland, Christoffer	A	IAC-19.E1.3.2
Stavrakakis, Hector-Andreas	CA	IAC-19.B4.8.7
Stawicki, Pawel	CA	IAC-19.C2.IP.21
Staško, Martin	CA	IAC-19.E3.2.2
Steckel, Amanda	A	IAC-19.C4.8-B4.5A.6
Steel, G. Daniel	CA	IAC-19.A1.1.12
Steel, Robin	A	IAC-19.B6.3.9
Steele, Jonathan	CA	IAC-19.B6.3.12
Steenkamp, Leon	CA	IAC-19.B2.4.1
Stefan, Meier	CA	IAC-19.D2.3.2
Stefano, Ragaglini	CA	IAC-19.C2.5.1
Stefanski, Philip	CA	IAC-19.A1.6.2
Stefoudi, Dimitra	CA	IAC-19.D4.5.1
Steiger, Christoph	A	IAC-19.A3.5.2
Steimle, Christian	A	IAC-19.B3.3.12
Steimle, Christian	CA	IAC-19.B5.2.4
Steindl, Ryan	CA	IAC-19.D3.IP.5
Steindorf, Lukas	CA	IAC-19.A3.2A.4
Steindorf, Lukas	A	IAC-19.A3.2C.10
Steiner, Jeffrey	A	IAC-19.A3.IP.2
Steinhöfel, Erik	CA	IAC-19.E6.1.8
Steinkogler, Cordula	A	IAC-19.A6.8.10
Stekl, Ivan	CA	IAC-19.A3.3A.11
Stekl, Ivan	CA	IAC-19.A5.4-D2.8.9
Stellingwerff, Sean	A	IAC-19.B6.IP.9
Stenström, Eva	CA	IAC-19.C4.3.3
Stepanova, Daria	A	IAC-19.B2.1.1

Name	Role	Paper
Stepanova, Daria	CA	IAC-19.C3.IP.3
Stephan, Hubertus	CA	IAC-19.A2.6.7
Stephens, Matthew	A	IAC-19.C2.1.1
Stephens, Matthew	CA	IAC-19.D4.1.12
Stephens, Matthew	CA	IAC-19.A5.3-B3.6.5
Stephens, Matthew	CA	IAC-19.C4.10.4
Stephenson, Keith	CA	IAC-19.C3.5-C4.7.2
Stesina, Fabrizio	CA	IAC-19.D1.1.7
Stesina, Fabrizio	A	IAC-19.C4.4.9
Stesina, Fabrizio	CA	IAC-19.B6.1.3
Stesina, Fabrizio	CA	IAC-19.B4.6B.4
Stetson, Douglas	CA	IAC-19.B4.6B.1
Stevenson Soler Chisabas, Roy	CA	IAC-19.C2.7.10
Stewart, Brian	CA	IAC-19.A6.6.6
Steyn, Willem (Herman)	CA	IAC-19.A6.5.1
Stickrod, Nathaniel	CA	IAC-19.D2.7.10
Stier, Annika	CA	IAC-19.E1.IP.24
Stigliano, Francesco	A	IAC-19.B6.1.10
Still, Vincent	CA	IAC-19.A3.2A.4
Stillwagen, Frederic	CA	IAC-19.D3.2A.10
Stilwell, Ruth	A	IAC-19.E3.4.8
Stindl, Torsten	CA	IAC-19.D1.3.5
Stirpe, Giovanna	CA	IAC-19.A6.7.9
Stober, Javier	A	IAC-19.A2.3.1
Stochaj, Steven	CA	IAC-19.D1.2.3
Stochaj, Steven	CA	IAC-19.B4.9-GTS.5.8
Stochaj, Steven	CA	IAC-19.B2.7.11
Stodieck, Louis	CA	IAC-19.A1.8.2
Stodieck, Louis	CA	IAC-19.A2.7.9
Stoeckle, Matthew	CA	IAC-19.C1.1.7
Stoffers, Martin	CA	IAC-19.A6.IP.21
Stognii, Mihail	CA	IAC-19.A6.6.1
Stoica, Adrian	CA	IAC-19.B3.8-GTS.2.9
Stojcovic, Igor	CA	IAC-19.B2.4.5
Stokes, Hedley	CA	IAC-19.A6.4.6
Stokes, Hedley	CA	IAC-19.C2.5.2
Stokes, Maria	CA	IAC-19.A1.4.14
Stoldt, Annika	CA	IAC-19.A1.3.17
Stolfi, Angelo	A	IAC-19.C2.2.5
Stoll, Enrico	CA	IAC-19.A6.1.9
Stoll, Enrico	CA	IAC-19.B6.2.2
Stoll, Enrico	CA	IAC-19.D6.1.8
Stoll, Enrico	CA	IAC-19.A6.4.6
Stotler, Charles	A	IAC-19.B1.6.10
Stough, Robert	CA	IAC-19.D4.4.1
Stough, Robert	CA	IAC-19.A5.4-D2.8.1
Stras, Luke	CA	IAC-19.A3.2B.4
Straschnoy, Axel	A	IAC-19.E1.9.12
Straub, Jeremy	CA	IAC-19.A6.6.8
Straub, Jeremy	A	IAC-19.D5.IP.2
Straub, Jeremy	A	IAC-19.D5.4.2
Straube, Ulrich	CA	IAC-19.A1.5.5
Straus, Paul	A	IAC-19.B1.1.7
Strauss, Friedolin	CA	IAC-19.C4.9.1
Streetman, Brett	CA	IAC-19.A6.5.7
Strelchenko, Yevgen	CA	IAC-19.C4.1.6
Strippoli, Luigi	A	IAC-19.A3.3B.8
Strizzi, Jon	CA	IAC-19.B4.5.4
Strobl, Klaus H.	CA	IAC-19.A3.4B.4
Stromgren, Chel	A	IAC-19.A5.2.2
Stroup, Tom	CA	IAC-19.E3.3.1
Strutzenberg, Louise	CA	IAC-19.A2.6.2
Stubbe, Peter	CA	IAC-19.E3.2.5
Stubits, Rachel	A	IAC-19.A1.3.8
Studor, George	A	IAC-19.B4.9-GTS.5.6
Stuffler, Timo	CA	IAC-19.A3.2A.11
Stupl, Jan	CA	IAC-19.C3.4.10
Sturdevant, Rick	A	IAC-19.E4.2.6
Styles, Jarrod	CA	IAC-19.D5.4.3
Stäbler, Tina	A	IAC-19.D1.3.5
Stäbler, Tina	CA	IAC-19.C2.5.7
Su, William	A	IAC-19.B2.1.6
Suarez, George	CA	IAC-19.B4.9-GTS.5.8
Subba, Saran	CA	IAC-19.A1.4.1
Subbarao, Kamesh	CA	IAC-19.A6.1.7

Name	Role	Paper
Sublett, Johnie	A	IAC-19.E2.2.9
Subramanian, Gokull	A	IAC-19.E2.3-GTS.4.9
Subramanian, Palaniappan	CA	IAC-19.C3.IP.4
Suedfeld, Peter	CA	IAC-19.A1.1.5
Suedfeld, Peter	CA	IAC-19.A1.1.7
Suedfeld, Peter	A	IAC-19.A1.1.12
Sugawara, Yoshiki	CA	IAC-19.A3.IP.14
Sugawara, Yoshiki	CA	IAC-19.C2.7.8
Suimenbayev, Bagdat	CA	IAC-19.C3.IP.2
Suimenbayeva, Zhanna	CA	IAC-19.C3.IP.2
Sulla, Joseph	CA	IAC-19.A3.2C.2
Sullivan, Alexander	A	IAC-19.D3.2A.12
Sullivan, Kelli	CA	IAC-19.E6.1.9
Sullivan, Woodruff	CA	IAC-19.A4.1.17
Sumah, Kwaku	A	IAC-19.E6.3.3
sumanth nagendla, Sai	CA	IAC-19.C3.3.6
Sumelzo Martinez, Ivan	A	IAC-19.C1.6.3
Sumini, Valentina	CA	IAC-19.D4.1.2
Sumini, Valentina	CA	IAC-19.B3.8-GTS.2.8
Sun, Dechuan	CA	IAC-19.C2.1.11
Sun, Gongling	CA	IAC-19.B3.4-B6.4.8
Sun, Jiandang	CA	IAC-19.C1.9.6
Sun, Liang	CA	IAC-19.E2.2.2
Sun, Yue	A	IAC-19.A3.5.6
Sunaert, Stefan	CA	IAC-19.A1.2.4
Sunaert, Stefan	CA	IAC-19.A1.2.5
Sunaga, Terumi	CA	IAC-19.B2.2.2
Sundahl, Mark	A	IAC-19.E7.5.3
Sundaramoorthy, Prem	CA	IAC-19.A7.3.11
Sundaramoorthy, Prem	CA	IAC-19.B2.7.5
Sunil, Rahul	CA	IAC-19.C4.IP.31
Sureda, Miquel	CA	IAC-19.B4.6B.3
Surmacz, Pawel	A	IAC-19.C4.3.13
Surrenti, Vincenzo	CA	IAC-19.D5.3.10
Sustach, David	CA	IAC-19.E1.IP.18
Sutter, Brian	CA	IAC-19.C1.2.11
Suzuki, Go	CA	IAC-19.A1.IP.2
Suzuki, Hideyuki	CA	IAC-19.E1.3.7
Suzuki, Kazuto	A	IAC-19.E3.4.6
Suzuki, Koji	CA	IAC-19.B1.1.4
Suzuki, Koji	CA	IAC-19.B5.2.3
Suzuki, Nantel	CA	IAC-19.B3.1.8
Suzuki, Shinsuke	CA	IAC-19.C2.5.5
Suzurida, Yosuke	CA	IAC-19.D4.IP.9
Svec, Martin	A	IAC-19.E7.3.13
Svec, Martin	A	IAC-19.E7.IP.20
Svec, Martin	A	IAC-19.D4.5.9
Swaminathan, Akshita	CA	IAC-19.D4.IP.1
Swan, Cathy	CA	IAC-19.D4.3.8
Swan, Peter	CA	IAC-19.D4.3.2
Swan, Peter	A	IAC-19.D4.3.3
Swan, Peter	A	IAC-19.D4.3.8
Swan, Peter	A	IAC-19.D4.5.6
Swanson, Charles	CA	IAC-19.C3.5-C4.7.10
Swanson, Charles	A	IAC-19.C3.3.8
Swarmer, Tiffany	A	IAC-19.B3.5.3
Swarmer, Tiffany	CA	IAC-19.D1.4B.3
Sweeting, Martin	CA	IAC-19.B4.4.1
Sweeting, Martin	CA	IAC-19.D1.6.6
Sweeting, Sir Martin	CA	IAC-19.B1.1.10
Sweeting, Sir Martin	CA	IAC-19.B4.7.1
Sychev, Vladimir N.	CA	IAC-19.A1.8.14
Sylvestre-Baron, Annick	CA	IAC-19.A3.3A.5
Sysoyev, Valentin	CA	IAC-19.C3.IP.2
Szajnfarber, Zoe	CA	IAC-19.D3.1.4
Szajnfarber, Zoe	CA	IAC-19.E6.3.12
Szajnfarber, Zoe	CA	IAC-19.D3.4.4
Sznajder, Maciej	CA	IAC-19.B4.8.12
Szwaba, Adrian	CA	IAC-19.D2.6.6
Sánchez, Juan Carlos	A	IAC-19.B1.3.11
Sánchez Maestro, Raúl	A	IAC-19.C1.6.1
Sánchez-Ortiz, Noelia	A	IAC-19.B6.1.7
Säuberlich, Thomas	CA	IAC-19.A3.4B.9
Söllner, Gerd	CA	IAC-19.B3.4-B6.4.7
Söllner, Gerd	CA	IAC-19.B3.7.2

Name	Role	Paper
Sørensen, Karl-Johan	A	IAC-19.E5.1A.6
Sütterlin, Saskia	CA	IAC-19.E2.3-GTS.4.2
Sütterlin, Saskia	CA	IAC-19.A2.6.4

T

T, Selvakumaran	CA	IAC-19.C4.2.6
Tabarah, Edward	CA	IAC-19.B3.1.3
Taddeo, Terrance	CA	IAC-19.A1.3.6
Tagirova, Sabina	CA	IAC-19.A2.7.10
Taguchi, Makoto	CA	IAC-19.B4.2.2
Taheri, Ehsan	CA	IAC-19.C1.1.11
Taheri, Ehsan	CA	IAC-19.C1.2.8
Tai, Kang	CA	IAC-19.B6.2.12
Taiatu, Claudiu Mihai	CA	IAC-19.B4.1.2
Taiatu, Claudiu Mihai	A	IAC-19.E7.1.2
Tajima, Hiroyasu	CA	IAC-19.E1.4.10
Tajino, Junichi	A	IAC-19.A1.3.4
Tajmar, Martin	A	IAC-19.C3.5-C4.7.12
Tajmar, Martin	A	IAC-19.C4.8-B4.5A.11
Tajmar, Martin	CA	IAC-19.C4.10.8
Takada, Satoshi	CA	IAC-19.C4.3.2
Takahashi, Kazunori	CA	IAC-19.C4.4.1
Takahashi, Takashi	CA	IAC-19.B2.2.2
Takahashi, Tsukasa	CA	IAC-19.A1.IP.2
Takahashi, Yuki	CA	IAC-19.A3.2C.2
Takamoto, Ikuya	CA	IAC-19.C2.9.9
Takanashi, Tomohiro	CA	IAC-19.C4.8-B4.5A.12
Takao, Yuki	CA	IAC-19.C1.5.3
Takao, Yuki	A	IAC-19.C1.7.4
Takao, Yuki	CA	IAC-19.C1.9.8
Takei, Yuto	CA	IAC-19.C1.2.4
Takei, Yuto	A	IAC-19.A3.4A.3
Takei, Yuto	CA	IAC-19.A3.4A.5
Takei, Yuto	CA	IAC-19.C1.IP.11
Takei, Yuto	CA	IAC-19.C1.7.1
Takei, Yuto	CA	IAC-19.C1.7.3
Takemura, Kazutoshi	CA	IAC-19.C1.2.5
Takeuchi, Yu	A	IAC-19.E7.4.7
Takhanov, Rustem	CA	IAC-19.B4.6A.10
TAKIDA, Junya	CA	IAC-19.D2.4.3
Takla, Mina	A	IAC-19.B4.1.4
Takla, Mina	A	IAC-19.C3.1.10
Takla, Mina	A	IAC-19.A5.1.14
Takla, Mina	A	IAC-19.B4.7.10
Talafha, Mohmmad	CA	IAC-19.A7.2.4
TalebianKiakalayeh, Mahshid	A	IAC-19.E7.IP.11
TalebianKiakalayeh, Mahshid	CA	IAC-19.E7.7.5
Talevi, Monica	CA	IAC-19.E1.2.9
Tamburello, Valentina	CA	IAC-19.E3.1.3
Tamura, Keisuke	CA	IAC-19.E1.4.10
Tamura, Masayuki	CA	IAC-19.C4.10.7
Tamura, Sho	A	IAC-19.C2.2.8
Tamura, Takashi	CA	IAC-19.C4.1.4
Tan, Huifeng	CA	IAC-19.A6.6.5
Tan, Tianle	CA	IAC-19.C1.9.6
Tanabe, Kota	CA	IAC-19.B6.3.4
Tanaka, Kazuhiro	CA	IAC-19.D1.5.2
Tanaka, Koji	CA	IAC-19.C3.2.1
Tanaka, Koji	A	IAC-19.C3.2.5
Tanaka, Naohiro	CA	IAC-19.C3.2.1
Tanaka, Yu	CA	IAC-19.C1.2.5
Tanaka, Yu	A	IAC-19.E2.1.6
Tanaka, Yuri	A	IAC-19.E5.3.6
Tanasyuk, Pavlo	A	IAC-19.B2.1.12
Tanasyuk, Pavlo	A	IAC-19.E6.2.10
Tanasyuk, Pavlo	A	IAC-19.D4.IP.6
Tang, Xuehan	CA	IAC-19.B2.IP.6
Tani Hatakenaka, Mizuki	A	IAC-19.E7.7.7
Tanier, Guillaume	A	IAC-19.D2.2.3
Tanier, Guillaume	CA	IAC-19.B4.3.3
Tanier, Guillaume	CA	IAC-19.B6.IP.9
Tanier, Guillaume	CA	IAC-19.D1.4B.6
Tanier, Guillaume	A	IAC-19.B6.1.1
Tanima, Momoko	CA	IAC-19.A1.3.4

Name	Role	Paper
Tank, Jens	CA	IAC-19.A1.IP.10
Tao, Zhang	A	IAC-19.A2.7.2
Tarantini, Vincent	A	IAC-19.C4.8-B4.5A.8
Tardivel, Simon	CA	IAC-19.A3.4B.8
Targonski, John	A	IAC-19.C4.3.6
Targonski, John	A	IAC-19.C4.5.6
Tarter, Jill	CA	IAC-19.A4.1.5
Tarter, Jill	CA	IAC-19.A4.2.4
Tarter, Jill	A	IAC-19.A4.IP.1
Tasso de Figueirido Soussa, Joao	CA	IAC-19.B5.2.6
Tate-Brown, Judy	CA	IAC-19.B3.3.1
Tatsukawa, Tomoaki	CA	IAC-19.E1.3.7
Taveiros, Filipe	A	IAC-19.D2.IP.11
Taylor, Anthony	CA	IAC-19.D4.IP.7
Taylor, Ben	CA	IAC-19.A6.5.1
Taylor, Ben	A	IAC-19.A6.6.6
Taylor, Edward	CA	IAC-19.E2.3-GTS.4.6
Taylor, Scott	CA	IAC-19.D4.4.7
Taylor, Sydney	A	IAC-19.C2.8.3
Taylor, Zachary	A	IAC-19.E5.1A.7
Tchilian, Emil	A	IAC-19.B2.3.9
Team, MAIUS	CA	IAC-19.A2.1.1
Team, MAIUS	CA	IAC-19.A2.3.6
Team, SHILA	CA	IAC-19.B4.2.2
Tejeda, Jesús Manuel Muñoz	A	IAC-19.C2.IP.7
Tejumola, Taiwo Raphael	A	IAC-19.B4.1.20
Tejumola, Taiwo Raphael	CA	IAC-19.B3.4-B6.4.8
Telge, Saurav Sunil	CA	IAC-19.A3.5.8
Telge, Saurav Sunil	CA	IAC-19.A1.8.7
Temidayo Isaiah, Oniosun	A	IAC-19.B1.1.8
Temidayo Isaiah, Oniosun	A	IAC-19.B4.1.3
Temimi, Marouane	CA	IAC-19.E1.4.8
Ten, Vladimir	A	IAC-19.B4.IP.8
ten Hompel, Michael	CA	IAC-19.B3.4-B6.4.11
ten Hompel, Michael	CA	IAC-19.C2.9.7
Tenenbaum, Stepan	CA	IAC-19.C4.6.7
Tennen, Leslie I.	CA	IAC-19.A4.2.4
Tenorio, Luciana	A	IAC-19.C2.IP.6
Teo, Kah How	A	IAC-19.B6.2.12
Teodor, Loredana	CA	IAC-19.B4.9-GTS.5.4
Teofilatto, Paolo	CA	IAC-19.C1.4.3
Tepper, Eytan	A	IAC-19.E7.2.3
Terashima, Keita	CA	IAC-19.C2.1.5
Terata, Momoe	CA	IAC-19.D4.3.7
Terra, Maisa	A	IAC-19.C1.4.6
Terrier, Douglas	CA	IAC-19.D3.2A.10
Terrier, Douglas	CA	IAC-19.D3.4.6
Terui, Fuyuto	CA	IAC-19.C1.2.4
Terui, Fuyuto	CA	IAC-19.A3.4A.2
Terui, Fuyuto	CA	IAC-19.A3.4A.3
Terui, Fuyuto	CA	IAC-19.A3.4A.5
Terui, Fuyuto	CA	IAC-19.C1.IP.11
Terui, Fuyuto	CA	IAC-19.C1.7.1
Terui, Fuyuto	A	IAC-19.C1.7.2
Terui, Fuyuto	CA	IAC-19.C1.7.3
Terui, Fuyuto	CA	IAC-19.A3.4B.1
Teschl, Franz	CA	IAC-19.B2.2.9
Teschl, Franz	CA	IAC-19.D1.5.4
Teuber, Jörn	A	IAC-19.D1.4A.6
Teye Matey, Ernest	A	IAC-19.E1.IP.22
Tezari, Anastasia	A	IAC-19.A1.5.1
Thai, Zhong	A	IAC-19.A3.IP.13
Thakur, Megh Suhas	CA	IAC-19.A3.5.8
Thangavelautham, Jekanthan	CA	IAC-19.D4.1.5
Thangavelautham, Jekanthan	A	IAC-19.D3.1.8
Thangavelautham, Jekanthan	CA	IAC-19.A2.5.2
Thangavelautham, Jekanthan	CA	IAC-19.B4.7.11
Thangavelautham, Jekanthan	CA	IAC-19.B4.8.13
Thangavelautham, Jekanthan	CA	IAC-19.B4.6B.1
Thangavelu, Madhu	A	IAC-19.D4.2.7
Thangavelu, Madhu	A	IAC-19.D4.2.14
Thangavelu, Madhu	A	IAC-19.D3.1.7
Thangavelu, Madhu	CA	IAC-19.D3.2A.12
Thangavelu, Madhu	A	IAC-19.A3.IP.7
Thapa, Jiten	A	IAC-19.E1.IP.15

Name	Role	Paper
Tharakan, John T	CA	IAC-19.C4.4.7
Thaxton, James	CA	IAC-19.A1.5.5
Thayer, David	CA	IAC-19.B2.7.11
Theil, Stephan	CA	IAC-19.C1.8.4
Thevenot, Cecile	CA	IAC-19.A1.7.13
Thiebaut, Cédric	CA	IAC-19.A6.4.10
Thiele, Thomas	CA	IAC-19.D2.5.10
Thiessen, Luke	CA	IAC-19.E1.IP.25
THIRION, Guillaume	CA	IAC-19.A5.1.9
THIRION, Guillaume	CA	IAC-19.B3.4-B6.4.10
THIRION, Guillaume	CA	IAC-19.A3.IP.8
THIRION, Guillaume	CA	IAC-19.E7.IP.19
Thirion, Samuel	CA	IAC-19.C4.6.2
Thomas, Chesler	CA	IAC-19.C4.6.6
Thomas, Dale	CA	IAC-19.C3.5-C4.7.6
Thomas, Eric	A	IAC-19.C2.IP.14
Thomas, Justin	CA	IAC-19.B6.IP.4
Thomas, Lawrence	CA	IAC-19.A5.4-D2.8.12
Thomas, Stephanie	A	IAC-19.C3.5-C4.7.10
Thomas, Stephanie	CA	IAC-19.C3.3.8
Thomas Jayachandran, Aurthur Vimalachandran	CA	IAC-19.B4.1.11
Thomassin, Jerome	A	IAC-19.C1.8.3
Thompson, Arland	A	IAC-19.C1.5.10
Thompson, Connor	CA	IAC-19.A3.IP.5
Thompson, Joseph	A	IAC-19.C1.IP.16
Thompson, Mike	A	IAC-19.E1.IP.14
Thompson, Paul	CA	IAC-19.A3.5.1
Thorat, Shubham	CA	IAC-19.E2.3-GTS.4.4
Thorbourn, Dennis	CA	IAC-19.D5.3.9
Thorn, Elliott	CA	IAC-19.A6.4.8
Thorne, David	CA	IAC-19.E2.3-GTS.4.8
Thorp, Vern	CA	IAC-19.D2.1.7
Thronson, Harley	CA	IAC-19.A7.1.5
Thurmond, Kyle	CA	IAC-19.C4.9.2
Tian, Huimin	A	IAC-19.C4.IP.28
Tianyang, Yang	CA	IAC-19.C2.7.9
Tiburzi, Caterina	CA	IAC-19.A7.2.3
Ticker, Ronald	CA	IAC-19.B3.1.7
Ticker, Ronald	A	IAC-19.A5.4-D2.8.2
Tietjen, Ian	CA	IAC-19.A1.4.6
Tiller, Ben	CA	IAC-19.A1.7.4
Tillman, Rachel	A	IAC-19.E4.2.10
Tillman, Rachel	A	IAC-19.E5.IP.1
Timakova, Ekaterina	CA	IAC-19.E2.4.5
Timmermans, Remco	CA	IAC-19.B4.IP.18
Tinjod, Nathalie	A	IAC-19.E4.1.10
Tinsley, Tim	CA	IAC-19.A3.3A.11
Tinsley, Tim	CA	IAC-19.C4.4.11
Tinsley, Tim	CA	IAC-19.C2.7.2
Tinsley, Tim	CA	IAC-19.A5.4-D2.8.9
Tipton, Mike	CA	IAC-19.A3.5.5
Tiraplegui Riveras, Sergio	A	IAC-19.B4.IP.24
Titov, Dmitry M.	CA	IAC-19.C2.7.6
Titov, Dmitry M.	CA	IAC-19.C2.8.2
Titz, Alexander	CA	IAC-19.D1.3.3
Titz, Alexander	A	IAC-19.E2.3-GTS.4.10
Tiutiunnik, Nikolai	CA	IAC-19.B4.IP.9
Tiwari, Ayush	CA	IAC-19.C4.6.6
Tkachenko, Maksym	CA	IAC-19.C4.IP.17
Tkachev, Stepan	CA	IAC-19.C1.5.9
Tng, Faith	CA	IAC-19.A1.4.12
Tobar, Josue	CA	IAC-19.A7.2.7
Todd, Jessica	CA	IAC-19.B3.5.6
Toft Hansen, Kim	CA	IAC-19.B4.6B.7
Togni, Andrea	CA	IAC-19.B4.6A.11
Toh Ariel, S.xian	CA	IAC-19.A1.4.12
Tokudome, Shinichiro	CA	IAC-19.D2.3.8
Tolok, Stanislav	CA	IAC-19.C4.4.4
Tolometti, Gavin	CA	IAC-19.A3.2C.7
Tomazeti, Cristina	CA	IAC-19.D2.IP.16
Tomiki, Atsushi	CA	IAC-19.A3.4A.4
Tomilovskaya, Elena	CA	IAC-19.A1.2.4
Tomilovskaya, Elena	CA	IAC-19.A1.2.5
Tommerup, Maja	A	IAC-19.A1.3.18

Name	Role	Paper
Tomovic, Stefan	A	IAC-19.B3.7.10
Tomura, Takashi	CA	IAC-19.B4.6B.14
Tonetti, Stefania	CA	IAC-19.C1.1.5
Tonetti, Stefania	A	IAC-19.D1.2.5
Toomarian, Nikzad	CA	IAC-19.B4.IP.35
Topputo, Francesco	CA	IAC-19.C1.6.4
Topputo, Francesco	CA	IAC-19.B4.8.3
Topputo, Francesco	CA	IAC-19.C1.9.3
Torisaka, Ayako	CA	IAC-19.B4.6B.14
Torla, James	A	IAC-19.D4.3.4
Tornabene, Livio	CA	IAC-19.A3.2C.7
Torner, Jordi	CA	IAC-19.A2.3.5
Torre, Francesco	A	IAC-19.C1.9.5
Torres Perea, Cecilia Guadalupe	A	IAC-19.E1.1.9
Torres Reyes, Ivan Yahir	CA	IAC-19.E1.1.9
Torta, Elena	CA	IAC-19.A2.6.8
Tortora, Paolo	CA	IAC-19.A3.4B.5
Tosi, Maria Cristina	CA	IAC-19.A3.3A.11
Tosi, Maria Cristina	CA	IAC-19.C4.4.11
Tosi, Maria Cristina	CA	IAC-19.C2.7.2
Tosi, Maria Cristina	CA	IAC-19.A5.4-D2.8.9
Toso, Federico	CA	IAC-19.D2.IP.3
Toson, Elena	CA	IAC-19.C4.6.4
Toson, Elena	CA	IAC-19.C4.8-B4.5A.5
Toth, Norbert	CA	IAC-19.A3.4A.6
Toth, Norbert	CA	IAC-19.B4.8.12
Toukebri, Rania	CA	IAC-19.E6.3.2
Towashiraporn, Peeranan	CA	IAC-19.B1.1.11
Towfic, Zaid	CA	IAC-19.B2.7.1
Townsend, Andrew	CA	IAC-19.D4.2.8
Townsend, Andrew	CA	IAC-19.D3.IP.3
Townsend, Katherine	CA	IAC-19.E1.7.11
Townsend, Lawrence W.	CA	IAC-19.A1.5.2
Toyoshima, Morio	CA	IAC-19.B2.2.2
Trapp, Thomas	CA	IAC-19.D2.2.1
Traudt, Tobias	A	IAC-19.C4.3.9
Trautner, Roland	CA	IAC-19.D1.3.6
Travouillon, Tony	CA	IAC-19.A6.4.8
Tremblay, Isabelle	CA	IAC-19.A3.1.3
Trewitt, Jordan	CA	IAC-19.A3.2C.10
Trezzolani, Fabio	CA	IAC-19.C4.8-B4.5A.5
Trifoni, Eduardo	CA	IAC-19.C2.6.6
Trifoni, Eduardo	CA	IAC-19.D2.6.7
Trinca, Emiliano	CA	IAC-19.D5.3.10
Trinh, Huu	A	IAC-19.C4.1.2
Trivedi, Rohit	CA	IAC-19.A2.6.2
Trois, Alessio	CA	IAC-19.A4.1.11
Troll, John	CA	IAC-19.A5.3-B3.6.5
Tronchetti, Fabio	A	IAC-19.E7.5.1
Troutman, Patrick	CA	IAC-19.E1.5.3
Trudu, Matteo	A	IAC-19.A4.1.11
Trujillo, Alejandro	CA	IAC-19.B3.2.12
Trujillo, Alejandro	A	IAC-19.D3.1.11
Trujillo, Alejandro	CA	IAC-19.E2.3-GTS.4.5
Trujillo, Alejandro	CA	IAC-19.B3.8-GTS.2.8
Truscelli, Gianni	CA	IAC-19.A1.2.8
Truscelli, Gianni	CA	IAC-19.A1.3.3
Truscelli, Gianni	CA	IAC-19.A2.6.9
Truscelli, Gianni	CA	IAC-19.A2.6.10
Tsao, Jaime	CA	IAC-19.A1.3.17
Tsay, Michael	A	IAC-19.C4.8-B4.5A.1
Tsay, Michael	CA	IAC-19.B4.8.4
Tshisaphungo, Mpho	A	IAC-19.D5.3.2
Tsifakis, Dimitrios	CA	IAC-19.C4.4.1
Tsiganis, Kleomenis	CA	IAC-19.A6.4.6
Tsiganis, Kleomenis	CA	IAC-19.A6.6.4
Tsiganis, Kleomenis	CA	IAC-19.A3.4B.5
Tsiganis, Kleomenis	CA	IAC-19.E7.7.4
Tsog, Nandinbaatar	CA	IAC-19.B4.8.7
Tsuboi, Nobuyuki	CA	IAC-19.C4.2.9
Tsuda, Yuichi	CA	IAC-19.C1.2.4
Tsuda, Yuichi	CA	IAC-19.C1.3.7
Tsuda, Yuichi	A	IAC-19.A3.4A.2
Tsuda, Yuichi	CA	IAC-19.A3.4A.3
Tsuda, Yuichi	CA	IAC-19.A3.4A.5

Name	Role	Paper
Tsuda, Yuichi	CA	IAC-19.A3.4A.6
Tsuda, Yuichi	CA	IAC-19.C1.IP.11
Tsuda, Yuichi	CA	IAC-19.C1.7.1
Tsuda, Yuichi	CA	IAC-19.C1.7.2
Tsuda, Yuichi	CA	IAC-19.C1.7.3
Tsuda, Yuichi	CA	IAC-19.C1.7.4
Tsuda, Yuichi	CA	IAC-19.A3.4B.1
Tsuda, Yuichi	CA	IAC-19.A3.4B.2
Tsuda, Yuichi	CA	IAC-19.C1.9.8
Tsui, Kin Wing	CA	IAC-19.D1.3.4
Tsuji, Hiroyuki	CA	IAC-19.B2.2.2
Tsuji, Yoichi	CA	IAC-19.C2.9.1
Tsujita, Daisuke	CA	IAC-19.A5.4-D2.8.5
Tsukizaki, Ryudo	CA	IAC-19.C4.4.12
Tsunemitsu, Tsubasa	CA	IAC-19.B4.6B.14
Tsunoda, Toshiyasu	CA	IAC-19.B2.2.2
Tsutsui, Fumiya	A	IAC-19.B3.1.2
Tsutsui, Fumiya	CA	IAC-19.B3.3.13
Tubío-Pardavila, Ricardo	CA	IAC-19.E1.4.11
Tulbure, Ildiko	A	IAC-19.E5.IP.11
Tullos, Joshua	A	IAC-19.B6.1.9
Tumlinson, Rick	CA	IAC-19.E6.1.14
Tumlinson, Rick	A	IAC-19.E5.1B.2
Tung, Helen	A	IAC-19.E6.IP.5
Tung, Helen	A	IAC-19.E1.9.11
Tuohy, Eóin	CA	IAC-19.D1.1.5
Tuozzi, Alberto	CA	IAC-19.B2.1.3
Tuozzi, Alberto	CA	IAC-19.B2.2.4
Tuozzi, Alberto	CA	IAC-19.B2.4.2
Tuozzi, Alberto	CA	IAC-19.B2.6.2
Turcato, Martina	CA	IAC-19.A1.2.3
Turi, Judit	CA	IAC-19.E5.4.12
Turyshev, Slava G.	CA	IAC-19.C3.5-C4.7.10
Tyni, Mats	CA	IAC-19.A2.5.6
Tzeremes, Georgios	CA	IAC-19.E1.4.8
Téllez Gallego, Valeria Briceida	CA	IAC-19.A1.3.15
U		
Ubbels, Wouter Jan	CA	IAC-19.B4.9-GTS.5.4
Ubidia Incio, Roberto Adolfo	CA	IAC-19.A1.IP.16
Uchino, Masaya	A	IAC-19.E7.3.15
Uchiyama, Erika	CA	IAC-19.C4.8-B4.5A.12
Udrea, Bogdan	CA	IAC-19.C1.9.11
Ueno, Ichiro	CA	IAC-19.E1.3.7
Ueno, Takayuki	CA	IAC-19.C2.1.5
Ui, Kyoichi	CA	IAC-19.B4.5.9
Ulamec, Stephan	CA	IAC-19.A3.4A.6
Ulamec, Stephan	CA	IAC-19.A3.4B.2
Ulamec, Stephan	CA	IAC-19.A3.4B.5
Ulamec, Stephan	A	IAC-19.A3.4B.8
Ulamec, Stephan	CA	IAC-19.A3.4B.9
Ulivieri, Lorenzo	CA	IAC-19.A6.4.6
Umansky, Maxim	CA	IAC-19.D4.4.7
Umashankar, Sourav	CA	IAC-19.A1.8.1
Unal, Martin	CA	IAC-19.A7.IP.4
Underwood, Craig	CA	IAC-19.A3.2B.6
Underwood, Craig	CA	IAC-19.A6.6.6
Underwood, Craig	CA	IAC-19.D1.6.6
Untem, Flávia	CA	IAC-19.C4.IP.20
Unverzagt, Robert	A	IAC-19.B4.5.4
Uraz, Ayda	CA	IAC-19.E5.1A.4
Urbach, Christopher	CA	IAC-19.D1.3.3
Urbach, Christopher	CA	IAC-19.E2.3-GTS.4.10
Urbani, Andrea	CA	IAC-19.B4.5.11
Urbina, Diego A.	A	IAC-19.D1.3.6
Urbina, Diego A.	CA	IAC-19.A3.2C.6
Urbina, Diego A.	A	IAC-19.A3.2C.8
Urru, Enrico	CA	IAC-19.A6.IP.7
Urru, Enrico	CA	IAC-19.A6.7.9
Urrutia, Eugenio	CA	IAC-19.B4.6A.7
USCATEGUI, Jhonny	CA	IAC-19.B4.4.10
Usenko, V	CA	IAC-19.A1.IP.11
Usik, Maria A.	CA	IAC-19.A1.8.14
Usik, Maria A.	A	IAC-19.A1.8.15
Usinger, Ralf	CA	IAC-19.C2.5.12
Usui, Tomohiro	CA	IAC-19.A3.4B.8
Usui, Tomohiro	CA	IAC-19.A3.4B.9
Uwarowa, Inna	A	IAC-19.B4.9-GTS.5.5
Uwarowa, Inna	A	IAC-19.C2.IP.21
Uzhinsky, Ighor	CA	IAC-19.C4.6.10
Uzhinsky, Ighor	A	IAC-19.B5.3.5
V		
V, Eswaran	CA	IAC-19.C4.5.4
V, Eswaran	CA	IAC-19.C4.2.4
V, Mahesh	A	IAC-19.C4.5.4
V, Mahesh	CA	IAC-19.C4.2.4
V Gouda, Vishwajit	CA	IAC-19.A1.8.1
V. Moraes, Rodolpho	CA	IAC-19.D4.3.17
V. Sardeshmukh, Swanand	CA	IAC-19.C4.10.9
Vaccaro, David	A	IAC-19.E3.1.5
Vaccaro, David	CA	IAC-19.E3.IP.6
Vadrucci, Monia	CA	IAC-19.D5.3.10
Vagnone, Federica	CA	IAC-19.A2.6.8
Vaishnav, Abeer	CA	IAC-19.C3.2.12
Vaishnav, Abeer	A	IAC-19.D5.4.4
Vaishnav, Abeer	CA	IAC-19.B4.6B.12
Vakkada Ramachandran, Abhilash	CA	IAC-19.A1.6.1
Valania, Jeffrey	A	IAC-19.A5.1.6
Valayer, Simon	CA	IAC-19.B3.2.5
Valdivia-Silva, Julio	CA	IAC-19.A4.2.7
Valente, Cristina	CA	IAC-19.E1.5.2
Valente, Giuseppe	CA	IAC-19.A7.2.3
Valente, Giuseppe	A	IAC-19.B6.IP.1
Valentine, Peter	A	IAC-19.C2.4.9
Valentini, Giovanni	CA	IAC-19.A1.2.8
Valentini, Giovanni	CA	IAC-19.A1.3.3
Valentini, Giovanni	CA	IAC-19.B3.3.1
Valentini, Giovanni	CA	IAC-19.A2.6.9
Valentini, Giovanni	CA	IAC-19.A2.6.10
Valentour, Nanette	A	IAC-19.D2.3.5
Valerino, Powtawche	CA	IAC-19.A3.5.1
Vales, Marc	CA	IAC-19.E1.3.10
Vales, Marc	CA	IAC-19.D2.6.5
Vales, Marc	A	IAC-19.E6.4.11
Valle, Max	CA	IAC-19.D2.5.6
Vallejo, Leo	CA	IAC-19.E2.3-GTS.4.3
Vallino Costassa, Elena	CA	IAC-19.A2.6.9
Vallone, Giuseppe	CA	IAC-19.B2.2.4
Valluri, Sagarika	A	IAC-19.A4.2.14
Valsecchi, Giovanni B.	CA	IAC-19.A6.2.5
Valverde Carretero, Alberto	CA	IAC-19.A3.4A.9
van 't Hof, Jos	A	IAC-19.B4.7.12
Van Camp, Adriaen	CA	IAC-19.A3.2C.10
van de Belt, Tom H	CA	IAC-19.A1.3.9
van de Borne, Philippe	CA	IAC-19.A1.IP.10
Van de Water, David	CA	IAC-19.A5.4-D2.8.11
van den Berg, Floris P.	CA	IAC-19.A1.1.2
van den Berg, Floris P.	CA	IAC-19.A1.1.9
van den Berg, Rob	CA	IAC-19.E5.5.4
van der Kroon, Erwin	CA	IAC-19.A2.5.9
van der Laan, Ludger	CA	IAC-19.B1.3.4
van der Marel, Hans	CA	IAC-19.B4.2.11
van der Marel, Hans	CA	IAC-19.A3.2B.1
van der Veen, Egbert Jan	A	IAC-19.E6.1.13
van Dijk, Chris	CA	IAC-19.B4.4.4
van Ellen, Layla	CA	IAC-19.E5.2.11
van Ellen, Layla	A	IAC-19.E5.1B.6
Van Gansbeke, Ramona	CA	IAC-19.E5.3.3
van Ginkel, Giulio	A	IAC-19.C3.IP.3
Van Hauwaert, Pierre	CA	IAC-19.A6.4.10
van Leeuwen, Flora	CA	IAC-19.B3.2.5
van Noetsele, Lotte	CA	IAC-19.D4.2.8
van Noetsele, Lotte	CA	IAC-19.D3.IP.3
Van Ombergen, Angelique	A	IAC-19.A1.2.4
Van Ombergen, Angelique	A	IAC-19.A1.2.5
van Susante, Paul	A	IAC-19.D4.5.7
Van Vaerenbergh, Stefan	A	IAC-19.A2.4.4

Name	Role	Paper
Van wal, Stefaan	CA	IAC-19.C1.IP.11
van Weers, Henk	CA	IAC-19.A7.3.5
Van Zyl, Robert	CA	IAC-19.B2.4.1
Vananti, Alessandro	CA	IAC-19.A6.9.2
Vance, Leonard D	CA	IAC-19.A2.5.2
Vance, Rod	CA	IAC-19.A3.4B.9
Vanden Bussche, Simon	A	IAC-19.D1.5.1
Vanderaa, Lucas	CA	IAC-19.C2.IP.16
Vandevelde, Bart	CA	IAC-19.D1.3.6
Vanotti, Maurizio	CA	IAC-19.B5.3.4
Vanthuyne, Tillo	A	IAC-19.D1.5.5
Varacalli, Giancarlo	CA	IAC-19.B1.2.11
Varacalli, Giancarlo	CA	IAC-19.B1.3.2
Varewijck, George	A	IAC-19.B4.9-GTS.5.12
Vargas, Teófilo	CA	IAC-19.A4.2.7
Vargas Martinez, Hector Simon	A	IAC-19.B4.6A.7
Vargas-Cuentas, Natalia Indira	CA	IAC-19.E1.5.11
Vargas-Cuentas, Natalia Indira	CA	IAC-19.B4.IP.22
Vargas-Cuentas, Natalia Indira	A	IAC-19.E5.4.3
Vargas-Sanabria, Daniela	CA	IAC-19.B1.1.11
Varnado, Jakarda	CA	IAC-19.E1.3.1
Vasanth, Arpan	CA	IAC-19.A2.IP.5
Vasile, Massimiliano	CA	IAC-19.C1.2.1
Vasile, Massimiliano	CA	IAC-19.A6.IP.20
Vasile, Massimiliano	CA	IAC-19.B4.IP.20
Vasile, Massimiliano	CA	IAC-19.D2.IP.3
Vasile, Massimiliano	CA	IAC-19.D1.4B.7
Vasile, Massimiliano	CA	IAC-19.B4.8.10
Vasile, Massimiliano	CA	IAC-19.A3.4B.10
Vasilev, Ivan	CA	IAC-19.A1.3.1
Vasilev, Ivan	A	IAC-19.A1.4.13
Vasiliev, Valeriy	CA	IAC-19.B3.5.4
Vasko, Christopher	A	IAC-19.E6.3.7
Vasquez, Wendy	A	IAC-19.E5.IP.3
Vassilieva, Galina	A	IAC-19.A1.3.1
Vassilieva, Galina	CA	IAC-19.A2.7.10
Vastaroucha, Yvonne	A	IAC-19.E7.1.5
Vasu, Subith	A	IAC-19.C4.9.2
Vasudevan, Nijanthan	A	IAC-19.B4.9-GTS.5.15
Vasyanin, Yaroslav	CA	IAC-19.E7.2.2
Vatsal, Vishesh	A	IAC-19.C1.7.10
Vatturi, Sikindar	CA	IAC-19.A6.IP.17
Vatturi, Sikindar	CA	IAC-19.B1.IP.14
Vaudo, Ersilia	A	IAC-19.E1.IP.20
Vaz, Celio Costa	CA	IAC-19.D2.IP.16
Vazquez, Melissa	CA	IAC-19.A1.1.6
Vaïda, Pierre	CA	IAC-19.A1.2.3
Vedant, FNU	A	IAC-19.C1.5.2
Vedant, FNU	A	IAC-19.C1.IP.4
Vedanthu, Aditya	A	IAC-19.C2.3.10
Vedda, James	A	IAC-19.E3.2.1
Vega, Fernando	CA	IAC-19.E1.2.8
Velasco III, Romulo	CA	IAC-19.A5.3-B3.6.7
Velayudhan, Sneha	CA	IAC-19.A2.IP.5
Velez Justiniano, Yo-Ann	A	IAC-19.A1.6.2
Velidi, Gurunadh	CA	IAC-19.C4.5.5
Veliev, Nikita	A	IAC-19.A6.8.6
Velikonja, Claire	CA	IAC-19.A1.3.8
Vellutini, Elena	A	IAC-19.A6.7.9
Velte, Anthony	CA	IAC-19.D1.4B.1
Velterop, Emma	A	IAC-19.B1.1.11
Vena, Andrea	A	IAC-19.E6.4.7
Veniali, Francesco	CA	IAC-19.C2.5.1
Venkatapathy, Ethiraj	A	IAC-19.C2.4.1
Venkataraman, Arun Subramanian	CA	IAC-19.B4.9-GTS.5.15
Venneri, Paolo	CA	IAC-19.C3.5-C4.7.7
Ventre, Francesco	CA	IAC-19.D1.1.8
Ventura-Gonzalez, Daniel	CA	IAC-19.A2.3.5
Venugopal, Ramasamy	A	IAC-19.E1.2.5
Venugopal, Ramasamy	CA	IAC-19.E1.5.7
Venugopal, Ramasamy	A	IAC-19.E1.6.10
Vera, Isabel	A	IAC-19.A7.3.1
Vera, Isabel	CA	IAC-19.A7.3.5
Vera Cervantes, Victor Daniel	CA	IAC-19.A4.2.7
Veras, Carlos	CA	IAC-19.C4.9.8

Name	Role	Paper
Vercella, Valeria	CA	IAC-19.D4.1.7
Vercelli, Madison	CA	IAC-19.D2.2.2
Vercruyssen, Nathan	CA	IAC-19.B4.4.4
Verdier, Nicolas	CA	IAC-19.A3.3A.5
Verga, Alberto	CA	IAC-19.C4.2.11
Vergoossen, Tom	CA	IAC-19.B4.2.12
Vergoossen, Tom	A	IAC-19.B2.5.7
Verhoeven, Chris	CA	IAC-19.A7.3.9
Verhoeven, Chris	CA	IAC-19.A7.3.11
Verhoeven, Chris	CA	IAC-19.A3.IP.12
Verhoeven, Chris	CA	IAC-19.C2.IP.7
Verhoeven, Chris	CA	IAC-19.B4.7.12
Verhoeven, Chris	CA	IAC-19.B2.7.5
Verhoeven, Renee	A	IAC-19.A1.2.10
Verkhovsky, Igor	CA	IAC-19.B3.2.2
Verma, Maneesh Kumar	CA	IAC-19.A7.3.11
Verma, Maneesh Kumar	A	IAC-19.A3.IP.12
Verma, Maneesh Kumar	CA	IAC-19.C2.IP.7
Verma, Maneesh Kumar	CA	IAC-19.B2.7.5
Vermeulen, Angelo C.J.	A	IAC-19.D1.1.4
Vermeulen, Angelo C.J.	A	IAC-19.E5.2.1
Vermeulen, Angelo C.J.	A	IAC-19.E5.3.3
Vermeulen, Angelo C.J.	A	IAC-19.A1.7.9
Vernacchia, Matthew	CA	IAC-19.C1.7.8
Vernile, Alessandra	CA	IAC-19.E3.1.8
Vernile, Alessandra	CA	IAC-19.B5.2.5
Vernile, Alessandra	A	IAC-19.B5.3.6
Vernillo, Paolo	CA	IAC-19.D2.6.7
Vernon, Steven	A	IAC-19.C4.6.12
Vernon, Steven	CA	IAC-19.D4.4.1
Vernon, Steven	A	IAC-19.A5.4-D2.8.4
Verspieren, Quentin	A	IAC-19.E7.4.1
Vertadier, Heloïse	CA	IAC-19.D1.1.5
Vertadier, Heloïse	CA	IAC-19.A5.1.7
Vestito, Eleonora	CA	IAC-19.B2.2.8
Vestito, Eleonora	CA	IAC-19.E1.3.8
Vey, Vuthy	CA	IAC-19.E1.2.11
Via Ortega, Pol	CA	IAC-19.B4.6B.10
Vial, Vanessa	CA	IAC-19.C4.4.10
Viana, Cristina	CA	IAC-19.A5.3-B3.6.8
Viavattene, Giulia	A	IAC-19.C1.2.7
Viavattene, Giulia	CA	IAC-19.B4.8.12
Viaña, Carlos	CA	IAC-19.A4.2.7
Vicario de Miguel, Gonzalo	CA	IAC-19.D1.2.5
Vicario de Miguel, Gonzalo	CA	IAC-19.A6.4.6
Vicario de Miguel, Gonzalo	CA	IAC-19.A6.6.4
Vidal de Prados, Adrián	CA	IAC-19.B1.1.11
Vidal de Prados, Adrián	CA	IAC-19.E5.4.10
Vidmar, Matjaz	A	IAC-19.D3.1.5
Vidmar, Matjaz	A	IAC-19.E6.3.9
Vieira, Tristan	CA	IAC-19.D4.3.9
Vignali, Leonardo	CA	IAC-19.A2.7.11
Vijayan, Ria	CA	IAC-19.C1.8.5
Vijayaraghavan, Krishna	CA	IAC-19.E2.4.1
Vilcapuma Vinces, Patricia	CA	IAC-19.A4.2.7
Vilhena da Cunha, Francisco	CA	IAC-19.B1.2.12
Villa, MArco	CA	IAC-19.D1.1.1
Villafana, Lizvette	CA	IAC-19.D1.1.2
Villafana, Lizvette	A	IAC-19.A7.2.7
Villafana, Lizvette	CA	IAC-19.D1.2.9
Villafana, Lizvette	CA	IAC-19.B4.IP.16
Villalba Corbacho, Victor	CA	IAC-19.B1.3.9
Villanueva Justino, Nicole	A	IAC-19.E1.IP.27
Villanueva Justino, Nicole	A	IAC-19.B1.6.12
Villanueva Justino, Nicole	CA	IAC-19.B5.3.8
Villemos, Gert	CA	IAC-19.B6.1.1
Villoresi, Paolo	A	IAC-19.B2.2.4
Vilà-Valls, Jordi	CA	IAC-19.B2.6.8
Vinas, Maria Jose	CA	IAC-19.E1.6.6
Vinci, Antonio	CA	IAC-19.C4.5.7
Vincke, Jonah	CA	IAC-19.B4.4.6
Vinokhodova, Alla	CA	IAC-19.A1.1.4
Viola, Nicole	CA	IAC-19.D4.1.7
Viola, Nicole	CA	IAC-19.D4.1.8
Viola, Nicole	CA	IAC-19.C4.6.5

Name	Role	Paper
Viola, Nicole	CA	IAC-19.C4.IP.33
Viola, Nicole	CA	IAC-19.B4.7.5
Viola, Nicole	CA	IAC-19.D6.3.4
Viquerat, Andrew	CA	IAC-19.C2.2.6
Viquerat, Andrew	CA	IAC-19.C2.2.12
Viquerat, Andrew	CA	IAC-19.A6.6.6
Virkar, Aditya	A	IAC-19.C4.IP.31
Virmontois, Cédric	CA	IAC-19.A3.4B.8
Visagie, Lourens	CA	IAC-19.E2.1.1
Vishwakarma, Kirti	A	IAC-19.D4.1.10
Vishwakarma, Kirti	CA	IAC-19.D4.1.14
Vishwakarma, Kirti	A	IAC-19.C3.IP.4
Visner, Samuel	A	IAC-19.D5.4.9
Visone, Roberto	CA	IAC-19.C2.5.1
Visscher, Peter	CA	IAC-19.A3.2B.4
Visser, Francois	A	IAC-19.B2.4.1
Vitalpur, Sharada	CA	IAC-19.B2.7.6
Viturro Balufo, Mauro	A	IAC-19.C1.1.9
Vivenzio, Salvatore	CA	IAC-19.D4.2.8
Vivenzio, Salvatore	CA	IAC-19.D3.IP.3
Vivenzio, Salvatore	A	IAC-19.B4.8.11
Viviani, Antonio	CA	IAC-19.A2.2.2
Viviano, Salvatore	CA	IAC-19.A7.2.3
Vizzi, Carlo	CA	IAC-19.B3.5.5
Vlachopoulou, Eirini Ioanna	CA	IAC-19.E3.1.1
Vlahovic, Branislav	A	IAC-19.A7.3.6
Vlaskin, Anton	CA	IAC-19.C3.IP.3
Vlasov, Pavel	CA	IAC-19.B3.4-B6.4.6
Vlasov, Pavel	CA	IAC-19.B3.5.4
Voecks, Gerald	CA	IAC-19.D3.2A.2
Voegt, Stefan	CA	IAC-19.B2.5.2
Voggenreiter, Heinz	CA	IAC-19.D1.3.5
Vogt, Cornelius	CA	IAC-19.D2.3.2
Vogt, Sandra	CA	IAC-19.E3.1.3
Volkova, Anastasiia	A	IAC-19.B1.4.3
Volkova, Tatiana	A	IAC-19.E5.1A.5
Volkova, Tatiana	A	IAC-19.D5.1.8
Vollmer, John	CA	IAC-19.B6.IP.10
Volpe, Renato	A	IAC-19.D1.3.7
Volpe, Renato	A	IAC-19.C1.8.1
Volpert, Thibault	CA	IAC-19.D2.IP.6
von der Dunk, Frans	A	IAC-19.E7.3.2
von der Ohe, Martin	CA	IAC-19.B2.7.9
von der Wiesche, Melanie	CA	IAC-19.A3.2C.3
von Kurnatowski, Lynn	CA	IAC-19.A6.IP.21
von Wielligh, Chris	A	IAC-19.E2.1.1
Vongsantivanich, Wasanchai	A	IAC-19.B1.4.5
Vos, Jan	CA	IAC-19.D2.4.5
Votta, Raffaele	CA	IAC-19.D1.1.1
Vovk, Alla	CA	IAC-19.B3.5.5
Vrakking, Vincent	CA	IAC-19.A1.7.5
Vricella, Antonio	CA	IAC-19.C2.6.9
Vu, Huu Quan	CA	IAC-19.B2.3.10
Vu, Huu Quan	CA	IAC-19.B4.7.14
Vu, Huu Quan	A	IAC-19.D1.4B.8
Vu, Huu Quan	CA	IAC-19.B2.7.9
Vu Trong, Thu	CA	IAC-19.E1.IP.29
Vukich, Marco	CA	IAC-19.A2.7.11
Vutha, Amar	CA	IAC-19.A2.1.3

W

Waclavicek, René	A	IAC-19.E5.1A.1
Waclavicek, René	CA	IAC-19.A1.7.5
Wada, Koji	CA	IAC-19.A3.4B.8
Wada, Yutaka	CA	IAC-19.D2.2.4
Wada, Yutaka	CA	IAC-19.C4.IP.34
Wagener, Martin	CA	IAC-19.A3.2A.4
Wagn, Hanwei	CA	IAC-19.C4.2.9
Wagner, Erika	A	IAC-19.A2.5.8
Wagner, Katherine	A	IAC-19.B6.2.1
Wagner, Paul	CA	IAC-19.A6.1.9
Waid, Michael C.	CA	IAC-19.B3.3.14
Wain Hirschberg, Jeremy	CA	IAC-19.D4.2.8
Wain Hirschberg, Jeremy	CA	IAC-19.D3.IP.3
Wakabayashi, Sachiko	CA	IAC-19.A3.2A.6
Wakabayashi, Sachiko	A	IAC-19.A3.2B.9
Wakai, Yuki	A	IAC-19.C2.5.5
Wakimoto, Takuya	A	IAC-19.D6.1.9
Wald, Samuel	A	IAC-19.E5.1A.3
Wald, Samuel	CA	IAC-19.B3.2.12
Waldman, Ariel	A	IAC-19.E1.7.13
Walker, Christopher	CA	IAC-19.B4.6B.1
Walker, Eric	CA	IAC-19.E1.5.1
Walker, John	A	IAC-19.A3.2B.5
Walker, Lewis	A	IAC-19.B4.8.10
Walker, Rachel	CA	IAC-19.D1.4B.3
Walker, Roger	CA	IAC-19.A3.2B.6
Walker, Roger	CA	IAC-19.B4.6B.7
Walker, Scott	CA	IAC-19.A6.4.6
Walker, Scott	A	IAC-19.C2.5.2
Wall, John	CA	IAC-19.D2.9-D6.2.5
Wall, Ronan	CA	IAC-19.C1.IP.16
Walton, Lori	A	IAC-19.A4.2.5
Walton, Lori	A	IAC-19.A4.IP.3
Walz, Carl	CA	IAC-19.B3.3.12
Wan, Li	A	IAC-19.D2.IP.15
Wan, Mark	CA	IAC-19.B2.7.11
Wanere, Vaibhav	A	IAC-19.E2.4.7
Wanere, Vaibhav	CA	IAC-19.E2.4.8
WANG, BING	CA	IAC-19.C4.IP.3
Wang, Dongxia	A	IAC-19.B2.5.11
Wang, Fei	CA	IAC-19.D2.2.6
Wang, Feng	CA	IAC-19.C2.9.4
WANG, Guangyu	CA	IAC-19.B2.1.8
Wang, Haixing	CA	IAC-19.C4.6.1
Wang, Hao	A	IAC-19.B1.IP.2
Wang, Hongyue	A	IAC-19.C4.IP.1
WANG, Jia	CA	IAC-19.A2.3.4
Wang, Jiaming	CA	IAC-19.B6.1.4
Wang, Liping	CA	IAC-19.C2.8.3
Wang, Mingming	CA	IAC-19.A6.IP.10
Wang, Mingyuan	CA	IAC-19.B4.2.11
Wang, Mingyuan	CA	IAC-19.A3.2B.1
Wang, Ningfei	CA	IAC-19.C4.4.5
Wang, Shuai	A	IAC-19.B2.3.11
Wang, Xin	A	IAC-19.C2.IP.3
WANG, Xinsheng	CA	IAC-19.B4.4.10
Wang, Xinsheng	CA	IAC-19.E1.IP.18
Wang, Xinsheng	CA	IAC-19.B6.1.4
Wang, Yang	A	IAC-19.C1.9.3
Wang, Yanjie	CA	IAC-19.A6.4.8
Wang, Yi	A	IAC-19.C4.9.12
Wang, Yi	A	IAC-19.C4.9.15
Wang, Yue	A	IAC-19.A6.2.12
Wang, Yue-Jiao	A	IAC-19.B2.IP.6
Wang, Yuren	A	IAC-19.A2.2.4
Wang, Zhaowei	A	IAC-19.C1.2.12
Wang, Zhenbo	CA	IAC-19.C1.9.7
Wang, Zhuo	A	IAC-19.C1.6.10
Wang, Zhuping	CA	IAC-19.B2.IP.6
Wappler, Fabian	CA	IAC-19.A5.3-B3.6.2
WARANON, LIKHIT	A	IAC-19.B5.3.9
Warden, Matthew	CA	IAC-19.B4.8.10
Wardman, Jeffrey	CA	IAC-19.A6.1.5
Waring, Christopher	CA	IAC-19.A2.5.3
Warner, Martin	CA	IAC-19.A1.4.14
Warner, Marvin	A	IAC-19.A2.6.3
Washington, Sunny	CA	IAC-19.E1.2.4
Wasniowski, Aleksander	CA	IAC-19.A1.6.7
Wasniowski, Aleksander	CA	IAC-19.A1.6.11
Wasniowski, Aleksander	CA	IAC-19.A1.8.8
Wasser, Yi	CA	IAC-19.A6.IP.21
Wasson Valle, Roy	A	IAC-19.E1.IP.9
Watanabe, Akihito	CA	IAC-19.B4.6B.14
Watanabe, Daiki	CA	IAC-19.C4.10.11
Watanabe, Kazuki	CA	IAC-19.B4.6B.14
Watanabe, Kazuo	CA	IAC-19.E1.3.7
Watanabe, Sei-ichiro	CA	IAC-19.C1.2.4
Watanabe, Sei-ichiro	CA	IAC-19.A3.4A.2

Name	Role	Paper
Waterman, Gideon	A	IAC-19.A1.5.5
Watson, Erkai	CA	IAC-19.A6.2.1
Watson, Erkai	CA	IAC-19.A6.3.10
Watson, Erkai	CA	IAC-19.B4.4.6
Watson, Jared	CA	IAC-19.A2.4.8
Watson-Morgan, Lisa	CA	IAC-19.B3.1.8
Wattles, Kirsti	CA	IAC-19.A5.3-B3.6.8
Watzinger, Jakob	CA	IAC-19.C3.IP.3
Waugh, Sean	CA	IAC-19.A1.8.4
Wayth, Randall	CA	IAC-19.A4.1.2
Webb, Alan	A	IAC-19.D2.2.11
Webb, Frank	A	IAC-19.B1.2.4
Webb, Gerald	CA	IAC-19.D2.2.11
Webb, James	CA	IAC-19.A6.4.8
Webb, Ryan	CA	IAC-19.A3.IP.13
Weber, Noel	A	IAC-19.C1.8.6
Weber, Uli	CA	IAC-19.A1.5.13
Webster, Cassandra	CA	IAC-19.C1.4.5
Wecklich, Christopher	CA	IAC-19.B6.2.8
Weeden, Charity	A	IAC-19.E3.4.4
Weeden, Charity	CA	IAC-19.A6.8.7
Weert, Annelotte	CA	IAC-19.E1.IP.34
Weert, Annelotte	CA	IAC-19.A3.2C.9
Wegman, Erik	CA	IAC-19.E6.4.6
Wegner, Kristin	A	IAC-19.E1.8.6
Wei, Huang	CA	IAC-19.B1.3.5
Wei, Jiangtao	A	IAC-19.A6.9.7
Wei, Wang	CA	IAC-19.A2.2.10
Wei, wei yi	A	IAC-19.D1.4A.7
Wei, Xuanbo	CA	IAC-19.B2.IP.10
Weidinger, Herbert	CA	IAC-19.D4.3.12
Weigel, Martin	CA	IAC-19.A6.IP.21
Weikert, Marcel	CA	IAC-19.C3.5-C4.7.12
Weikert, Sven	CA	IAC-19.D2.3.2
Weinfurter, H.	CA	IAC-19.B4.2.14
Weinhoffer, Michael	A	IAC-19.E7.5.10
Weis, Lorraine	A	IAC-19.C1.IP.18
Weisenberger, Steffen	CA	IAC-19.B4.6B.11
Weiss, Avishai	A	IAC-19.C2.IP.2
Weiss, Bernd	A	IAC-19.E1.IP.30
Weiss, Bernd	A	IAC-19.E6.IP.2
Weiss, Caleb	CA	IAC-19.B3.2.9
Weiss, Camilla	A	IAC-19.B4.7.1
Weiss, Jeff	CA	IAC-19.A1.1.11
Weiss, Sascha	CA	IAC-19.C1.5.7
Weiss, Sascha	A	IAC-19.B4.IP.2
Weitz, Lesley	CA	IAC-19.A6.7.10
Welch, Chelsea	CA	IAC-19.C1.2.11
Welch, Chris	CA	IAC-19.B4.1.20
Welch, Chris	CA	IAC-19.D3.1.3
Welch, Chris	CA	IAC-19.A2.4.5
Welch, Chris	CA	IAC-19.B4.8.11
Welch, Chris	CA	IAC-19.D3.4.7
Weller, Rene	CA	IAC-19.D1.4A.6
Welsch, Carol	A	IAC-19.B4.5.14
Welsh, William	CA	IAC-19.A4.1.9
Wen, Haocheng	CA	IAC-19.C4.IP.3
Wen, Haowei	CA	IAC-19.C2.IP.3
Wen, Xue-zhong	CA	IAC-19.A6.IP.15
Wendrich, Thijs	CA	IAC-19.A2.3.6
Wenger, Manuela	CA	IAC-19.B2.2.9
Wenger, Manuela	CA	IAC-19.D1.5.4
Wenzlawski, Andrè	CA	IAC-19.A2.1.1
Wenzlawski, Andrè	CA	IAC-19.A2.3.6
Weppler, Johannes	A	IAC-19.B3.3.6
Werkheiser, Niki	CA	IAC-19.D3.2B.5
Werkmeister, Astrid	CA	IAC-19.B4.3.10
Werling, Lukas	CA	IAC-19.C4.9.1
Wermuth, Martin	CA	IAC-19.B6.2.8
Werner, Anika	CA	IAC-19.A1.1.1
Werner, Philipp	CA	IAC-19.B4.6A.1
Werthimer, Dan	CA	IAC-19.A4.1.1
Werthimer, Dan	CA	IAC-19.A4.1.3
West, Matthew	CA	IAC-19.C1.IP.4
Western, Joshua	A	IAC-19.E6.1.7

Name	Role	Paper
White, Daniel	A	IAC-19.A1.7.11
White, Daniel	A	IAC-19.A5.4-D2.8.7
White, Daniel	A	IAC-19.C3.4.9
White, Frank	A	IAC-19.E5.3.1
Whitehead, Gary	CA	IAC-19.B6.3.1
Whitley, Sally	CA	IAC-19.D1.4B.4
Whitmire, Alexandra	CA	IAC-19.A1.4.10
Whittaker, Philip	A	IAC-19.B4.4.1
Whittenburg, Karl	CA	IAC-19.A3.5.1
Wiedemann, Carsten	CA	IAC-19.A6.1.9
Wieder, Maxwell	A	IAC-19.D1.4B.4
Wieger, Anna	A	IAC-19.D3.1.4
Wieger, Anna	CA	IAC-19.E6.2.2
Wieger, Anna	CA	IAC-19.D3.4.4
Wiens, Stuart	CA	IAC-19.A3.2A.3
Wiese, Tim	A	IAC-19.D4.3.12
Wigbels, Lyn	CA	IAC-19.E1.8.6
Wilburn, Greg	A	IAC-19.B4.8.9
Wild, Fridolin	CA	IAC-19.B3.5.5
Wilde, Paul	A	IAC-19.D6.1.7
Wilden, Helmut	CA	IAC-19.A6.IP.3
Wilhelm, Claire	A	IAC-19.D2.7.1
Wilhelm, Marius	CA	IAC-19.C4.1.3
Wilhelm, Marius	A	IAC-19.C4.9.1
Wilke, Kai	CA	IAC-19.E1.3.12
Wilken, Jascha	CA	IAC-19.D2.3.10
Wilken, Jascha	CA	IAC-19.D2.4.2
Wilken, Jascha	CA	IAC-19.D2.4.8
Wilken, Jascha	CA	IAC-19.D2.5.10
Willekens, Philippe	A	IAC-19.E1.6.12
Willekens, Stéphanie	A	IAC-19.E3.3.3
Williams, Aquim	CA	IAC-19.E1.3.4
Williams, Caleb	CA	IAC-19.D3.2A.9
Williams, Caleb	A	IAC-19.B4.IP.3
Williams, Calum	CA	IAC-19.B1.3.8
Williams, Kenneth	CA	IAC-19.C1.2.11
Williams, Phillip	CA	IAC-19.D3.2A.6
Williams, Phillip	CA	IAC-19.D3.2A.10
Williams, Rebecca	CA	IAC-19.B6.IP.4
Williams, Thomas	A	IAC-19.A1.4.10
Williams, Thomas	CA	IAC-19.B6.3.12
Williams-Byrd, Julie	A	IAC-19.D3.2B.1
Williamson, Ray A.	A	IAC-19.E3.4.12
Willner, Konrad	CA	IAC-19.A3.4B.8
Wilson, Jody	CA	IAC-19.A1.5.2
Wilson, Krystal	CA	IAC-19.E3.2.3
Wilson, Krystal	A	IAC-19.E3.4.7
Wimmer-Schweingruber, Robert F.	CA	IAC-19.D4.4.1
Wimmer-Schweingruber, Robert F.	CA	IAC-19.D4.4.2
Windpassinger, Patrick	CA	IAC-19.A2.1.1
Windrim, Lloyd	CA	IAC-19.A6.1.5
Winkler, Andreas	CA	IAC-19.A7.3.2
Winter, Frank H.	A	IAC-19.E4.2.11
Winter, Othon	CA	IAC-19.D4.3.17
Winter, Othon	A	IAC-19.C1.4.8
Winterhalter, Daniel	A	IAC-19.A1.IP.14
Winterhalter, Daniel	A	IAC-19.A1.7.16
Winternitz, Luke	CA	IAC-19.B3.4-B6.4.2
Winters, Amanda	A	IAC-19.A1.2.14
Wir, Magnus	CA	IAC-19.C4.10.12
Wirzburger, John	CA	IAC-19.A3.5.1
Witt, Johannes	CA	IAC-19.B3.4-B6.4.5
Wittig, Manfred	CA	IAC-19.B4.3.7
Witzmann, Marco	CA	IAC-19.D1.IP.5
Witzmann, Marco	CA	IAC-19.D1.4B.6
Woerner, David	CA	IAC-19.C3.3.1
Wojtsekhowski, Bogdan	CA	IAC-19.A7.3.6
Wokes, Stephen	CA	IAC-19.A6.6.9
Wolanski, Piotr	CA	IAC-19.D2.6.8
Wolanski, Piotr	A	IAC-19.C4.9.6
Wolbers, Thomas	CA	IAC-19.A1.1.1
Wolf, Aron	CA	IAC-19.D2.9-D6.2.5
Wolf, Eric	CA	IAC-19.A4.1.9
Wolf, Nadja	A	IAC-19.B4.9-GTS.5.9
Wolf, Ronny	CA	IAC-19.B4.IP.2

Name	Role	Paper
Wolf, Ronny	CA	IAC-19.B4.6B.11
Wolff, Friederike	CA	IAC-19.A3.4A.6
Wolff, Friederike	CA	IAC-19.B4.8.12
Wolff, Friederike	CA	IAC-19.A3.4B.2
Wolfson, Nancy C.	A	IAC-19.E1.9.2
Wolny, Josh	A	IAC-19.E3.2.3
Wolny, Josh	A	IAC-19.A6.8.2
Wolosik, Anthony	A	IAC-19.C1.IP.14
Woltran, Markus	CA	IAC-19.E3.2.2
Won, Young-Jin	A	IAC-19.C3.3.3
Wong, Anthony	CA	IAC-19.D5.3.9
Wong, Benjamin	A	IAC-19.D4.IP.9
Wong, Doug	CA	IAC-19.D1.4B.3
Wood, Danielle	CA	IAC-19.A2.3.1
Wood, Danielle	CA	IAC-19.E5.3.2
Wood, Danielle	CA	IAC-19.E3.4.3
Wood, Danielle	CA	IAC-19.A2.6.5
Wood, Danielle	CA	IAC-19.A6.8.9
Wood, Danielle	A	IAC-19.B1.6.4
Wood, Danielle	CA	IAC-19.B1.5.10
Wood, Kent	CA	IAC-19.B3.4-B6.4.2
Woodford, Nathaniel	A	IAC-19.E1.IP.2
Woods, Lawrence	CA	IAC-19.B6.3.12
Woodward, Hannah	CA	IAC-19.D1.1.5
Wooldridge, Charles	A	IAC-19.B1.1.6
Woollands, Robyn	CA	IAC-19.C1.1.11
Worden, Pete	CA	IAC-19.A4.1.3
Worden, S. P.	CA	IAC-19.A4.1.1
Worden, S. Pete	CA	IAC-19.A4.1.16
Worden, S. Pete	CA	IAC-19.D4.4.8
Work, Joseph	CA	IAC-19.A5.4-D2.8.11
Worms, Jean-Claude	CA	IAC-19.A3.3A.11
Worms, Jean-Claude	CA	IAC-19.C4.4.11
Worms, Jean-Claude	CA	IAC-19.C2.7.2
Worms, Jean-Claude	CA	IAC-19.A5.4-D2.8.9
Wright, M Clara	A	IAC-19.C2.7.4
Wright, Raymond	CA	IAC-19.D2.6.10
Wright Knutsen, Elise	A	IAC-19.B1.IP.5
Wu, An-Ming	A	IAC-19.A2.IP.1
Wu, Baoyuan	CA	IAC-19.C4.9.12
Wu, Baoyuan	CA	IAC-19.C4.9.15
Wu, Changqing	CA	IAC-19.B6.3.10
Wu, Di	A	IAC-19.C1.3.11
WU, Di	CA	IAC-19.A2.3.4
Wu, Di	CA	IAC-19.B5.3.8
Wu, Ji	CA	IAC-19.B1.2.9
Wu, Manrui	A	IAC-19.A1.1.10
Wu, Panlong	CA	IAC-19.C1.9.10
Wu, Qiang	CA	IAC-19.A6.3.2
Wu, Qiang	CA	IAC-19.A6.3.5
Wu, Qiang	CA	IAC-19.A6.3.6
Wu, Ruilin	CA	IAC-19.A1.1.10
Wu, Shunan	CA	IAC-19.C2.3.12
Wu, Tao	CA	IAC-19.C1.3.12
Wu, Tao	CA	IAC-19.C1.3.13
Wu, Xiaojie	CA	IAC-19.A6.2.12
Wu, Zhigang	CA	IAC-19.C2.3.12
Wu, Zhiwen	CA	IAC-19.C4.4.5
Wuesthoff, Tilo	CA	IAC-19.D1.6.8
Wurdak, Malte	CA	IAC-19.C4.1.10
Wuyts, Floris	CA	IAC-19.A1.2.4
Wuyts, Floris	CA	IAC-19.A1.2.5
Wyant, Rachael	CA	IAC-19.A5.4-D2.8.10
Wyman, Robert	CA	IAC-19.D2.9-D6.2.4
Wörner, Lisa	CA	IAC-19.A2.1.2
Wöske, Florian	CA	IAC-19.A2.1.6
Wöske, Florian	CA	IAC-19.C1.IP.5
Wünnemann, Kai	CA	IAC-19.A3.4B.5
Wüstenberg, Philipp	A	IAC-19.D5.1.3
Wüstenberg, Philipp	CA	IAC-19.B2.3.10
Wüstenberg, Philipp	CA	IAC-19.B2.7.9
X		
Xia, Keqiang	CA	IAC-19.B2.IP.10
Xiang, Gang	A	IAC-19.D2.5.12
Xiao, Hou	CA	IAC-19.C4.IP.24
Xiao, Liping	CA	IAC-19.B1.IP.2
Xiao, Litian	A	IAC-19.D2.2.6
Xiao, Nan	CA	IAC-19.D2.2.6
Xiao Su, YI	A	IAC-19.E1.4.3
Xie, Jingchang	CA	IAC-19.A2.3.2
Xie, Kan	CA	IAC-19.C4.4.5
Xie, Kan	CA	IAC-19.B2.7.11
Xie, Qiaofeng	A	IAC-19.C4.IP.3
Ximenes, Samuel	A	IAC-19.A5.3-B3.6.10
Ximenes, Samuel	A	IAC-19.A3.IP.15
Ximenes, Samuel	A	IAC-19.A5.IP.7
Xin, Jie	A	IAC-19.B2.8-GTS.3.3
Xin, Jie	A	IAC-19.B2.IP.11
Xing, Shiwang	CA	IAC-19.A6.2.12
Xing, Shiwang	A	IAC-19.B6.1.4
Xingtai, Li	A	IAC-19.C4.IP.27
Xinxin, Fang	CA	IAC-19.C4.9.9
Xiping, Feng	CA	IAC-19.C4.5.12
Xiping, Feng	CA	IAC-19.C4.IP.24
Xu, Chen	CA	IAC-19.B2.IP.10
Xu, Chen	A	IAC-19.B2.6.10
Xu, Guofeng	CA	IAC-19.A2.3.2
Xu, Hui	CA	IAC-19.C4.10.13
XU, Lidong	CA	IAC-19.E6.3.8
Xu, Ming	CA	IAC-19.C1.3.12
Xu, Ming	CA	IAC-19.C1.3.13
Xu, Rui	CA	IAC-19.A3.3B.4
Xu, Rui	CA	IAC-19.C1.6.10
Xu, Rui	CA	IAC-19.B6.3.10
Xu, Xiaoguang	CA	IAC-19.B1.2.7
Xu, Xing	CA	IAC-19.D4.2.8
Xu, Xing	CA	IAC-19.D3.IP.3
Xu, Xudong	CA	IAC-19.B2.1.8
Xu, Yawei	CA	IAC-19.D2.IP.2
Xu, Yawei	A	IAC-19.E6.IP.4
Xu, Yawei	CA	IAC-19.D2.7.7
Xu, Yongli	CA	IAC-19.A2.2.10
Xue, Rui	A	IAC-19.C4.9.14
Xufei, Meng	CA	IAC-19.C4.9.13
Y		
Yabuta, Hikaru	CA	IAC-19.C1.2.4
Yadav, Rajesh	A	IAC-19.C2.7.7
Yadrentsev, Denis	CA	IAC-19.B3.2.4
Yagi, Kazuhiro	CA	IAC-19.D2.1.9
Yair, Yael	CA	IAC-19.A5.2.13
Yakimov, Evgenii	CA	IAC-19.C1.5.9
Yam, Chit Hong	A	IAC-19.A3.2A.5
Yamada, Kazuhiko	CA	IAC-19.D2.3.8
Yamada, Yoshino	A	IAC-19.D1.5.2
Yamada, Yuki	A	IAC-19.E2.1.4
Yamagiwa, Yoshiki	CA	IAC-19.D4.3.5
Yamagiwa, Yoshiki	A	IAC-19.D4.3.10
Yamaguchi, Kampei	CA	IAC-19.D4.3.5
Yamaguchi, Seiko Piotr	CA	IAC-19.B3.1.2
Yamaguchi, Seiko Piotr	CA	IAC-19.B3.3.13
Yamaguchi, Shoki	CA	IAC-19.A1.3.4
Yamamoto, Eriko	CA	IAC-19.E3.4.4
Yamamoto, Eriko	CA	IAC-19.A6.8.7
Yamamoto, Makoto	CA	IAC-19.E1.3.7
Yamamoto, Takayuki	A	IAC-19.C1.2.5
Yamamoto, Toru	CA	IAC-19.C1.6.6
Yamasaki, Nobuyuki	CA	IAC-19.C1.5.12
Yamashiro, Ryoma	A	IAC-19.D2.3.8
Yamauchi, Takashi	CA	IAC-19.B4.1.19
Yamauchi, Takashi	CA	IAC-19.B4.6B.6
Yamazaki, Masahiko	A	IAC-19.E1.8.1
Yamazaki, Taichi	A	IAC-19.B3.2.3
Yamazaki, Taichi	A	IAC-19.E6.5-GTS.1.6
Yamazaki, Yutaka	CA	IAC-19.B4.6B.14
Yan, Jian	CA	IAC-19.B2.3.11
Yan, Jian	CA	IAC-19.B2.3.13

Name	Role	Paper
Yan-ping, Qin	A	IAC-19.C4.9.7
Yan-ping, Qin	A	IAC-19.C4.9.10
Yan-ping, Qin	A	IAC-19.C4.9.11
Yana, Charles	CA	IAC-19.A3.3A.5
Yanagisawa, Toshifumi	A	IAC-19.B6.2.7
Yanez, Carlos	A	IAC-19.A6.9.5
Yang, Bowen	A	IAC-19.C4.IP.26
Yang, Chao	CA	IAC-19.A1.1.10
Yang, Dong	A	IAC-19.D1.IP.2
Yang, Guangning	CA	IAC-19.B2.7.11
Yang, Haiwei	A	IAC-19.C2.7.9
Yang, Kasey	CA	IAC-19.A6.6.2
Yang, Keyuan	A	IAC-19.B2.IP.9
Yang, Kuan	A	IAC-19.E7.4.10
Yang, Kuan	A	IAC-19.E7.IP.10
Yang, Liang	CA	IAC-19.B1.IP.17
Yang, Qi	CA	IAC-19.C2.8.1
Yang, Ruochen	CA	IAC-19.B2.6.10
Yang, Wulin	CA	IAC-19.A6.IP.4
Yang, Wulin	CA	IAC-19.A6.IP.5
Yao, Meibao	CA	IAC-19.C1.IP.12
Yao, Wendy	CA	IAC-19.A1.3.8
Yashar, Melodie	A	IAC-19.A5.3-B3.6.9
Yazdani Sarvestani, Hamidreza	A	IAC-19.C2.8.1
Yeakel, Kiley	CA	IAC-19.B6.IP.4
Yemets, Vitaly	A	IAC-19.D2.5.8
Yemets, Vitaly	A	IAC-19.D2.IP.10
Yeo, In-seok	CA	IAC-19.D2.2.9
Yerazunis, William	CA	IAC-19.C2.IP.2
Yermoldina, Gulnaz	A	IAC-19.C3.IP.2
Yeung, Jennifer	A	IAC-19.A1.4.2
Yevdokymov, Dmytro	A	IAC-19.A2.IP.2
Ying, Du	CA	IAC-19.C4.IP.24
Yokota, Kazuki	CA	IAC-19.C1.5.12
Yokota, Shun	A	IAC-19.D4.3.11
Yokota, Shun	CA	IAC-19.D4.3.14
Yokota, Yasuhiro	CA	IAC-19.C1.2.4
Yonemoto, Koichi	A	IAC-19.D2.4.6
Yonemoto, Koichi	CA	IAC-19.D2.4.9
Yoo, Jae Han	CA	IAC-19.C2.IP.9
Yoo, Mijin	A	IAC-19.E3.1.7
Yoo, Mijin	CA	IAC-19.E5.2.3
Yoon, Zizung	CA	IAC-19.B4.7.14
Yoon, Zizung	CA	IAC-19.B2.7.9
Yoshikawa, Kent	CA	IAC-19.C1.2.4
Yoshikawa, Kent	CA	IAC-19.A3.4A.3
Yoshikawa, Kent	CA	IAC-19.A3.4A.4
Yoshikawa, Kent	CA	IAC-19.A3.4A.5
Yoshikawa, Kent	A	IAC-19.C1.IP.11
Yoshikawa, Kent	CA	IAC-19.C1.7.1
Yoshikawa, Kent	CA	IAC-19.C1.7.2
Yoshikawa, Kent	CA	IAC-19.C1.7.3
Yoshikawa, Kent	CA	IAC-19.A3.4B.1
Yoshikawa, Makoto	CA	IAC-19.B6.2.7
Yoshikawa, Makoto	CA	IAC-19.C1.2.4
Yoshikawa, Makoto	CA	IAC-19.A3.4A.2
Yoshimitsu, Tetsuo	A	IAC-19.A3.4A.4
Yoshimitsu, Tetsuo	CA	IAC-19.A3.4A.6
Yoshimitsu, Tetsuo	CA	IAC-19.C1.IP.11
Yoshimitsu, Tetsuo	CA	IAC-19.A3.4B.2
Yoshimura, Hiroaki	CA	IAC-19.E2.1.6
Yoshimura, Naoko	CA	IAC-19.B2.2.2
Yoshimura, Yasuhiro	CA	IAC-19.A6.2.11
Younes, Badri	CA	IAC-19.B2.7.12
Young, Alex	CA	IAC-19.D1.6.6
Young, Sean	A	IAC-19.C3.4.10
Yousef, Areej	CA	IAC-19.A7.2.4
Ytterskog, Anne	CA	IAC-19.D2.2.7
Ytterskog, Anne	CA	IAC-19.A2.5.6
Yu, Chuangchuang	CA	IAC-19.C4.IP.1
Yu, JongPhil	CA	IAC-19.D2.IP.1
Yu, Lifan	CA	IAC-19.D2.4.7
YU, Shunjing	CA	IAC-19.A7.1.3
Yu, Sigang	CA	IAC-19.A6.IP.10
Yu, Wayne	A	IAC-19.B3.4-B6.4.2
Yu, Xia	A	IAC-19.A6.IP.2
Yu, Xiaoyan	CA	IAC-19.A2.IP.4
Yu, Xiaoyan	CA	IAC-19.D1.IP.4
Yuan, Dehu	A	IAC-19.D5.IP.5
Yuan, Jianping	CA	IAC-19.B2.5.13
Yuan, Jianping	CA	IAC-19.D1.IP.2
Yuan, Jing	A	IAC-19.B2.5.13
Yuan, Shiwei	CA	IAC-19.C4.6.1
Yuan, Si	A	IAC-19.E7.7.11
Yue, Xiaokui	CA	IAC-19.C2.IP.3
Yue, Xiaokui	CA	IAC-19.D1.IP.2
Yun, Seokhwan	CA	IAC-19.A2.IP.7
Yun, Seokhwan	A	IAC-19.A2.7.7
Yun, Yongtae	CA	IAC-19.C4.5.11
Yun, Yongtae	CA	IAC-19.C4.IP.2
Yun, Yongtae	CA	IAC-19.C4.IP.14
Yun, Yongtae	CA	IAC-19.C4.IP.30

Z

Zabel, Paul	CA	IAC-19.A1.7.12
Zabel, Paul	A	IAC-19.B3.8-GTS.2.2
Zabori, Balazs	A	IAC-19.A1.5.3
Zaccardi, Federica	A	IAC-19.C2.8.8
Zachmann, Gabriel	CA	IAC-19.D1.4A.6
Zacny, Kris	CA	IAC-19.A3.1.6
Zacny, Kris	CA	IAC-19.B6.2.9
Zacny, Kris	A	IAC-19.A3.3B.6
Zacny, Kris	CA	IAC-19.D3.2A.2
Zacny, Kris	A	IAC-19.A3.5.5
Zacny, Kris	CA	IAC-19.D4.5.7
Zakharchenko, Alexandr	CA	IAC-19.E2.4.5
Zakirov, Vadim	CA	IAC-19.D2.2.11
Zaklynsky, Alexander	CA	IAC-19.E5.3.10
Zaman, Fahad	A	IAC-19.A1.5.2
Zamboni, Andrea	CA	IAC-19.A3.3B.7
Zamora, Alberto	CA	IAC-19.E1.3.4
Zamora, Alberto	CA	IAC-19.E1.5.9
Zander, Martin	CA	IAC-19.D2.3.2
Zandvliet, Andre	CA	IAC-19.A2.3.3
Zangheri, Martina	CA	IAC-19.A1.6.6
Zanichelli, Alessandra	CA	IAC-19.A7.2.3
Zanna, Mario	CA	IAC-19.E2.4.6
Zannoni, Marco	CA	IAC-19.B4.8.8
Zanotti, Giovanni	CA	IAC-19.B4.8.8
Zanotti Fragonara, Luca	CA	IAC-19.A2.1.9
Zapata, Remigio	CA	IAC-19.A4.2.7
Zappino, Enrico	A	IAC-19.C2.1.10
Zappino, Enrico	CA	IAC-19.C2.2.3
Zappino, Enrico	A	IAC-19.C2.3.4
Zarcone, Gaetano	CA	IAC-19.B2.2.8
Zarcone, Gaetano	CA	IAC-19.E1.3.8
Zarubin, Dmitry	A	IAC-19.A5.1.5
Zasova, Ludmila V.	CA	IAC-19.C1.2.9
Zavialova, Natalia	A	IAC-19.A6.1.2
Zavrel, Christopher	CA	IAC-19.A5.4-D2.8.2
Zavrel, Christopher	CA	IAC-19.E3.6.5
Zazo, Ryan	CA	IAC-19.A2.1.3
Zea, Luis	CA	IAC-19.A1.8.2
Zea, Luis	A	IAC-19.A2.7.9
Zecca, Fabio	CA	IAC-19.D4.2.8
Zecca, Fabio	CA	IAC-19.D3.IP.3
Zee, Robert E.	CA	IAC-19.B4.6A.8
Zeidler, Conrad	CA	IAC-19.A1.7.5
Zeif, Reinhard	CA	IAC-19.B2.2.9
Zeif, Reinhard	CA	IAC-19.B2.7.7
Zeif, Reinhard	A	IAC-19.D1.5.4
Zeiger, Florian	CA	IAC-19.B5.1.2
Zeiger, Florian	CA	IAC-19.B2.3.12
Zeineddine, Anas	CA	IAC-19.E1.5.5
Zeis, Christopher	A	IAC-19.C2.3.8
Zeitlin, Cary	CA	IAC-19.A1.5.12
Zelentsov, Vladimir	CA	IAC-19.B4.IP.9
Zelenyi, Lev M.	CA	IAC-19.C1.2.9
Zell, Daniel	A	IAC-19.D2.5.5

Name	Role	Paper
Zemcov, Michael	CA	IAC-19.D4.4.2
Zeren, Zhima	CA	IAC-19.B1.1.9
Zervos, Vasilis	CA	IAC-19.D1.1.5
Zervos, Vasilis	A	IAC-19.E3.6.3
Zhang, Andrew	CA	IAC-19.E1.2.2
Zhang, Anthony	CA	IAC-19.E1.2.2
Zhang, Cheng	A	IAC-19.B1.2.9
Zhang, Duo	CA	IAC-19.A6.IP.16
Zhang, Feng	A	IAC-19.C1.IP.2
Zhang, Guanghui	CA	IAC-19.A6.IP.10
Zhang, Jia	CA	IAC-19.C4.IP.1
Zhang, Lei	CA	IAC-19.D2.IP.2
Zhang, Lei	CA	IAC-19.D2.7.7
Zhang, Lihui Lydia	A	IAC-19.E6.3.12
Zhang, Lihui Lydia	A	IAC-19.E6.5-GTS.1.11
Zhang, Mo	CA	IAC-19.B4.2.11
Zhang, Pinliang	CA	IAC-19.A6.3.2
Zhang, Pinliang	CA	IAC-19.A6.3.5
Zhang, Pinliang	CA	IAC-19.A6.3.6
Zhang, Shaohua	A	IAC-19.A2.2.10
Zhang, Shu	CA	IAC-19.A6.IP.2
Zhang, Silong	CA	IAC-19.C4.IP.27
Zhang, Silong	CA	IAC-19.C4.IP.28
Zhang, Tao	CA	IAC-19.A7.2.2
Zhang, Wei	CA	IAC-19.B3.1.4
Zhang, Wei	CA	IAC-19.B3.3.3
Zhang, Wenzheng	A	IAC-19.C1.IP.12
ZHANG, XIANG	A	IAC-19.C2.4.5
ZHANG, XIANG	A	IAC-19.C2.4.6
Zhang, Xiaochen	A	IAC-19.A3.IP.3
Zhang, Xiaoxin	CA	IAC-19.E1.IP.18
Zhang, Xiaoyong	A	IAC-19.C2.9.5
Zhang, Yingyi	A	IAC-19.A2.4.10
Zhang, Yutu	CA	IAC-19.B4.7.9
Zhao, Chang-Yin	CA	IAC-19.A6.IP.18
Zhao, Di	CA	IAC-19.B2.5.13
Zhao, Xurui	A	IAC-19.E2.2.3
Zhao, Yuting	A	IAC-19.B6.3.10
Zhaojun, Jin	A	IAC-19.A2.2.9
Zhaojun, Jin	CA	IAC-19.A2.4.10
Zhdankina, Yulia	CA	IAC-19.A1.8.14
Zhdanovich, Olga	CA	IAC-19.A6.6.3
Zhenhua, Zhang	A	IAC-19.B3.IP.6
Zhi, Jing	CA	IAC-19.D2.4.7
ZhiHui, Li	CA	IAC-19.C4.9.13
Zhou, Cong	A	IAC-19.D2.IP.7
Zhou, H. Larissa	CA	IAC-19.B3.7.9
Zhou, Lixin	CA	IAC-19.C4.5.12
Zhou, Weixing	CA	IAC-19.C4.IP.25
Zhou, Weixing	CA	IAC-19.C4.IP.26
Zhou, Yang	A	IAC-19.C1.9.10
Zhu, George.Z.H.	CA	IAC-19.B4.3.6
ZHU, Guoqiang	CA	IAC-19.C4.IP.6
Zhu, Yuqing	CA	IAC-19.B2.7.11
Zhu, Zhanxia	A	IAC-19.A6.IP.10
Zhu, Zheng Hong	A	IAC-19.A6.5.3
Zhu, Zheng Hong	A	IAC-19.C1.IP.13
ZHU, ZHENGHONG	CA	IAC-19.D4.3.13
Zhu, Zhi-Qiang	CA	IAC-19.A2.3.2
Zhuravleva, Olga	CA	IAC-19.A1.3.1
Ziach, Christian	CA	IAC-19.B4.8.12
Ziarnick, Brent	A	IAC-19.E1.4.5
Ziegahn, Richard	CA	IAC-19.D4.3.9
Ziegler, Bent	A	IAC-19.B2.2.1
Zigo, Matej	CA	IAC-19.A6.1.6
Zimmermann, Jannik	A	IAC-19.C2.6.4
Zimmermann, Steffen	CA	IAC-19.B6.1.11
Zody, Zachary	CA	IAC-19.D4.5.12
Zolesi, David	CA	IAC-19.A1.8.10
Zolesi, David	CA	IAC-19.A2.7.1
Zolesi, Valfredo	CA	IAC-19.A2.7.1
Zoli, Luca	CA	IAC-19.C4.5.7
Zoloty, Zachary	CA	IAC-19.A5.4-D2.8.11
Zompanti, Alessandro	CA	IAC-19.A1.2.8
Zorro, Camilo Andrés	CA	IAC-19.C3.3.4
Zorto Aguilera, Fernando José	CA	IAC-19.B4.1.13
Zorzano, María-Paz	CA	IAC-19.E5.IP.6
Zorzano, María-Paz	CA	IAC-19.A1.6.1
Zorzano Mier, María-Paz	CA	IAC-19.A2.3.8
Zribi, Mohammed	CA	IAC-19.E1.4.8
zu Eulenburg, Peter	CA	IAC-19.A1.2.4
zu Eulenburg, Peter	CA	IAC-19.A1.2.5
Zubrin, Robert	A	IAC-19.A5.2.6
Zubrin, Robert	A	IAC-19.C3.5-C4.7.9
Zuby, John	CA	IAC-19.B6.3.12
Zucca, Guido	CA	IAC-19.C2.5.1
Zucca, Pietro	CA	IAC-19.A7.2.3
Zumaeta, Esaú	CA	IAC-19.A4.2.7
Zuniga, Allison	A	IAC-19.A5.1.7
Zur, Christian	CA	IAC-19.D6.1.6
Zurbach, Stephan	CA	IAC-19.C4.4.10
Zweifel, Peter	CA	IAC-19.A3.3A.5
Á		
Águeda Maté, Alberto	CA	IAC-19.A6.9.3
Ç		
Çelik, Onur	CA	IAC-19.C1.2.5
Ö		
Östlund, Jan	CA	IAC-19.C4.3.3
Özalp, Tamer	A	IAC-19.B4.1.14
Ż		
Żak, Edyta	CA	IAC-19.A3.IP.16

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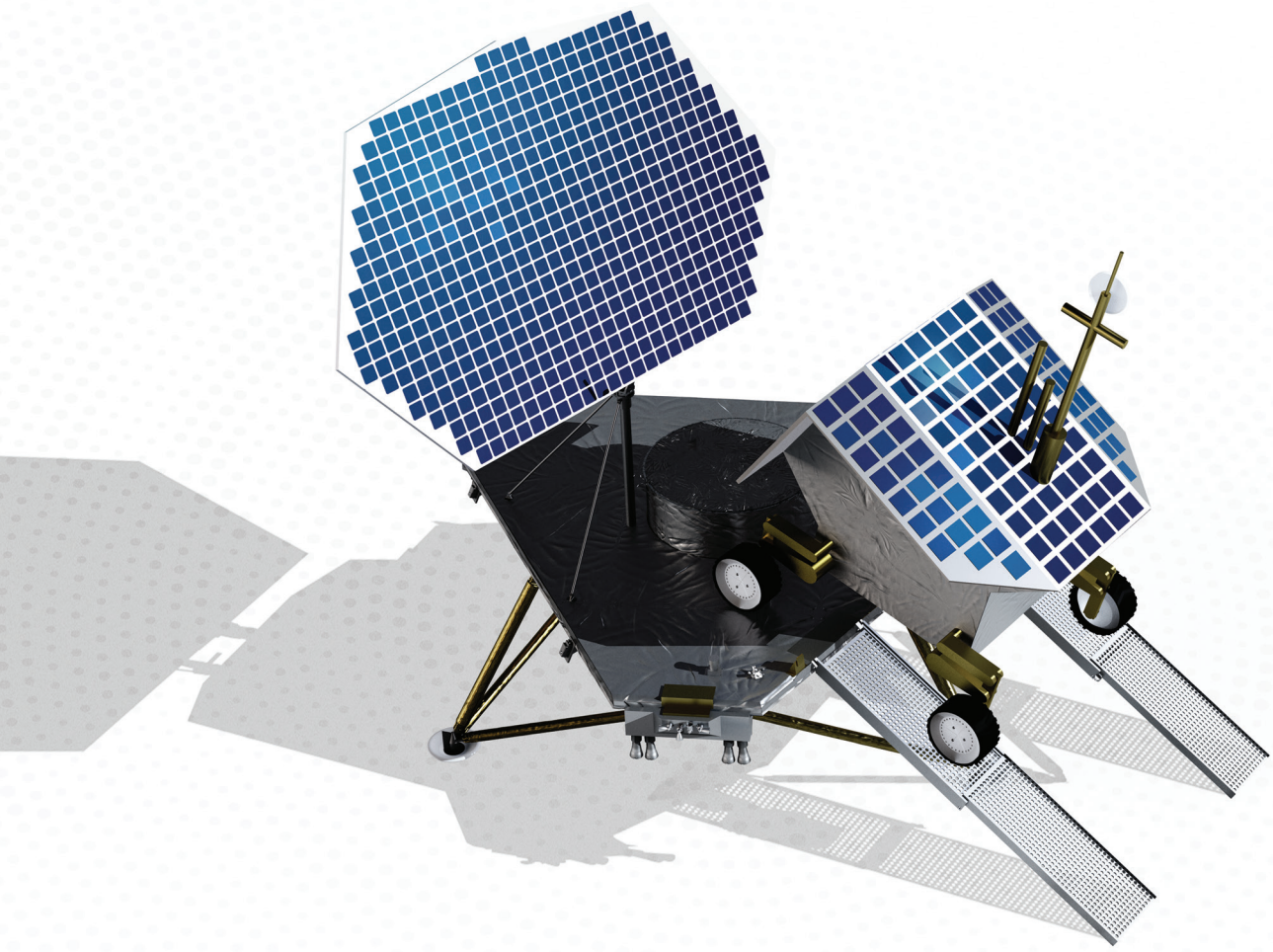

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