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للفضاء
MOHAMMED BIN RASHID SPACE CENTRE

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

IAC
DUBAI
2021

25–29 October 2021 | Dubai, United Arab Emirates



Technical Programme

Inspire, Innovate & Discover
for the Benefit of Humankind



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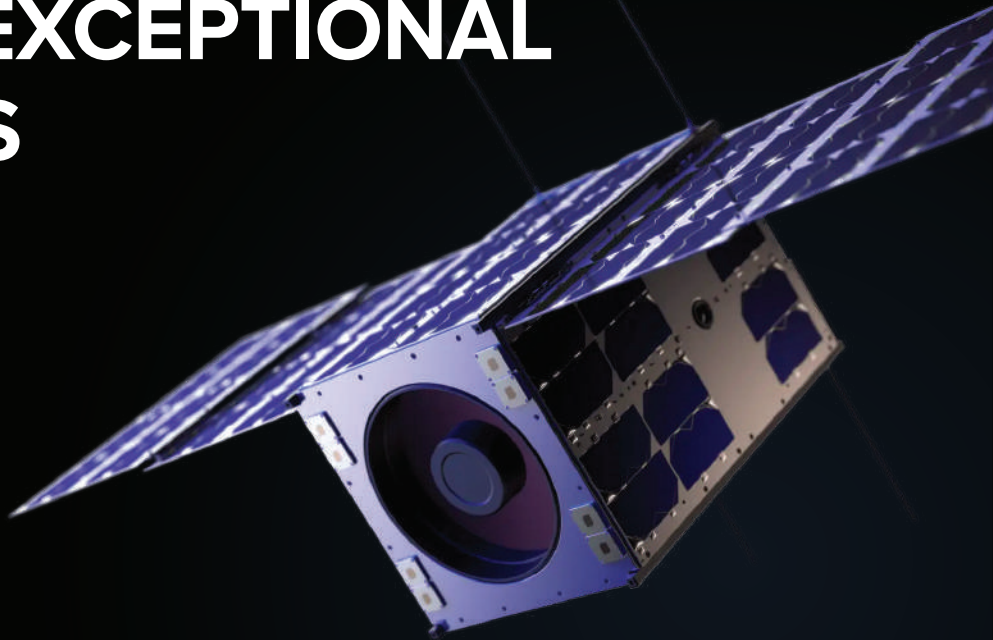
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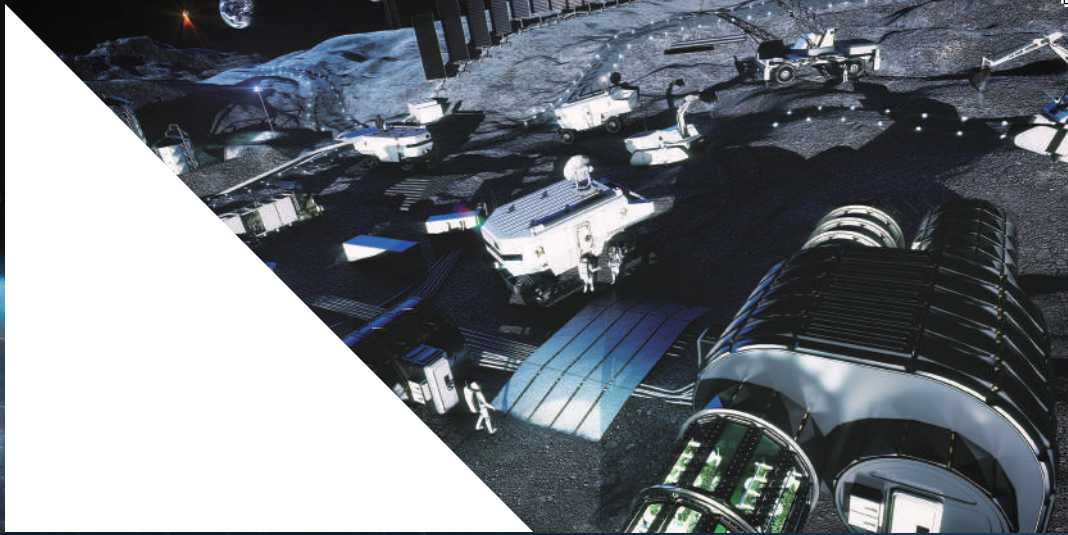
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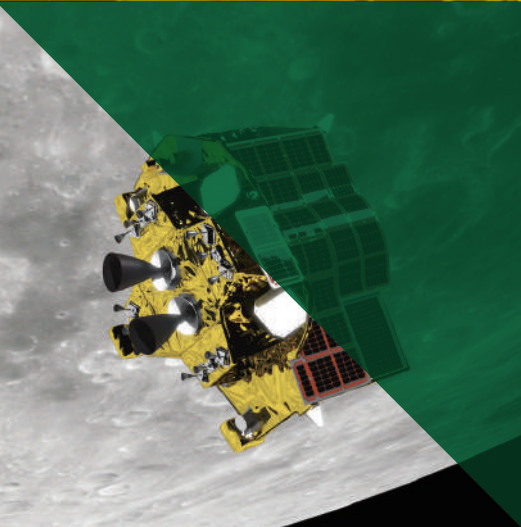
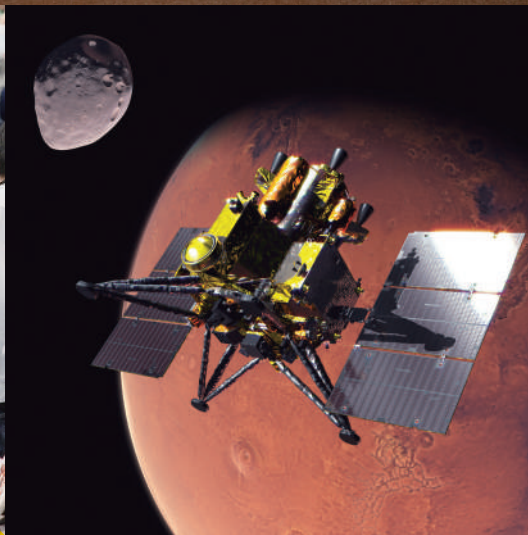


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1 Welcome Message

Message from IAF Vice President for Technical Activities

Dear Colleagues and Friends,

With due pride and pleasure, we welcome you at the 72nd International Astronautical Congress, from 25 to 29 October 2021 in Dubai, UAE. The annual global space gathering will assemble all of the great scientists, academicians, policy-makers, young researchers, students and delegates from all over the world to share together new and exciting results in Space!

The vibrant atmosphere of the IAC and the attractive Technical Programme will undoubtedly inspire you with highly qualified speakers and exciting topics, exploring the latest developments in Space. We will offer many opportunities to meet and interact with colleagues, and showcase your work to participants all around the world. It is a pleasure to report that we have another successful year for the IAC Technical Programme. The congress was able to attract over 3380 abstracts from authors worldwide, out of which 2037 have been accepted for oral presentations and 313 for interactive presentations. The Call for Special Sessions registered a record number of 87 Proposals which made the selection process particularly challenging. The selected Special Session Proposals will offer brand new interactive formats including campfires, fishbowls, design sprints and many more!

Do not miss the new Lightning Talk Session on Tuesday 26 October to discover fast paced, innovative and intriguing presentations delivered in under 1 minute! Please also come numerous to the IP area on Thursday 28 October for the traditional IP Award Ceremony and Interactive Presentations' Session!

All papers and video lectures are hosted on a dedicated Virtual Technical Gallery and can be accessed to all IAC Delegates after the Congress.

We congratulate you for your commitment and active participation and wish you all the success.

We also hope to meet you next year. Keep saving the dates!



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 72nd IAC.

You can still update your manuscripts through the IAF platform: <https://iafastro.directory/iac/account/login/>. Multimedia presentations can be uploaded 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 and Virtual Technical Gallery

The IAC 2021 Proceedings are available on a password protected site. The Congress participants will be provided on Monday 25 October with a link and online password to login and access the Congress Proceedings. If you did not receive the password, please contact: digital.library@iafastro.org. IAC papers will be indexed in the largest cited reference enhanced multidisciplinary databases: Elsevier's SCOPUS and Compendex.

The materials published as part of the Technical Programme (Lightning Talks, Video Lectures and Papers) will be made available to the Congress Delegates through the IAC 2021 Virtual Technical Gallery.

2.3 Speaker Preparation Room

Authors who missed the deadline for presentation submission (15 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.

Location: Dubai World Trade Centre, Exhibition Foyer (Ground Floor).

Opening hours:

Sunday 24 October, 14:00-18:00

Monday 25 October - Thursday 28 October, 08:30-18:00

Friday 29 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. Claims of hours of applicability toward professional education requirements are the responsibility of the participant.

2.6 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@iaaemail.org and

Eva Yi-Wei Chang, Managing Editor: managing-editor@iaaemail.org

2.7 IAF Public Speaking & Presentation Skills Lab



Day: Sunday 24 October 2021

Time: 15:00-17:00

Room: Sheikh Maktoum C

This two-hour workshop will focus on improving your presentation skills in an international scientific context such as the International Astronautical Congress. Presenters Carnett and Madry have given many workshops around the world and have advised graduate students for many years in developing their presentation skills. The workshop will begin with an introduction to the concept of culture and the role of culture in our participation in international activities.

Moderators



Scott Madry

Research Associate
Professor,
University of North
Carolina,
United States



Caroll Carnett

Director of English
Programs
International Space
University (ISU),
United States

2.8 Contact and Support

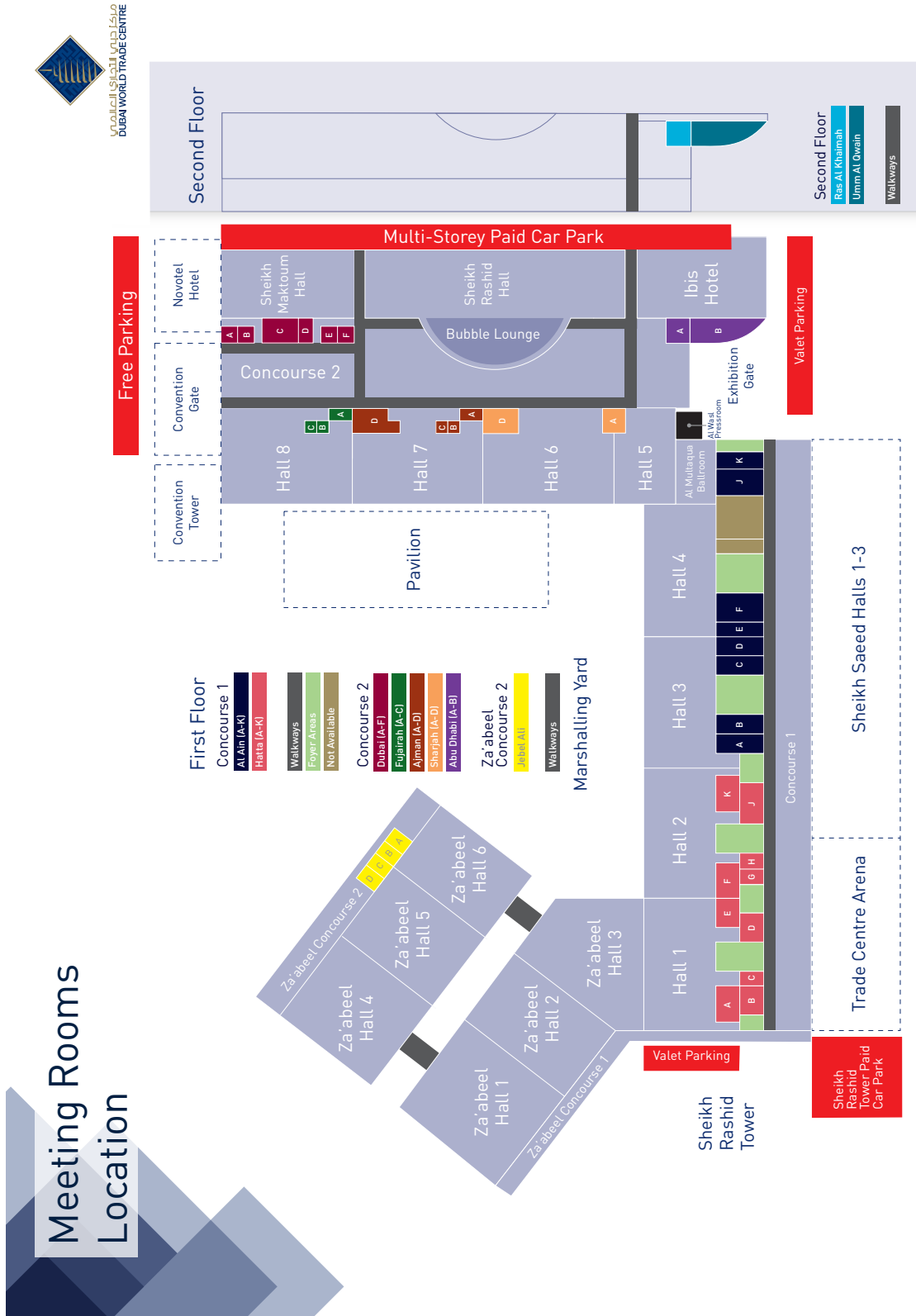
Technical Sessions: support@iafastro.org

Special Sessions: SpS@iafastro.org

Interactive Presentations: ipsupport@iafastro.org

Proceedings and Virtual Technical Gallery: digital.library@iafastro.org

2.9 Floor Plans



Ver:03 | Feb 2017



3 Technical Sessions

3.1 Technical Sessions at a Glance

Date	25/10/2021	26/10/2021	26/10/2021	27/10/2021	27/10/2021	27/10/2021	28/10/2021	28/10/2021	28/10/2021	29/10/2021	29/10/2021
Time / Room Number	15:15-18:15 A3.1	09:45-12:45 A3.2A	14:45-17:45 A3.2B	09:45-12:45 A3.3A	14:45-17:45 A3.3B	09:45-12:45 A3.4A	14:45-17:45 A3.5	09:45-12:45 A3.2C	13:30-16:30 A3.4B		
Sheikh Maktoum A	D2.1	C1.2	A6.4	D2.4	D2.5	D2.6	D2.7	D2.8/A5.4	D2.9/D6.2		
Sheikh Maktoum D	C1.1	A6.9	B3.3	C1.4	C1.5	C1.6	C1.7	C1.8	C1.9		
Sheikh Maktoum C	A6.1	B3.2	B4.3	A6.3	A6.2	A6.5	A6.6	A6.8/E9.1	A6.7		
Sheikh Rachid C	B3.1	B4.1	B4.3	B3.4/B6.4	B3.5	B3.6/A5.3	B3.7	B3.8	A6.10/B6.5		
Sheikh Maktoum B	B4.2	E7.1	E7.2	B4.4	B4.5	B4.6A	B4.7	B4.8	B4.6B		
Sheikh Rachid D	B5.1	C4.3	C4.5	E7.3	E7.4	E7.6/E3.5	E6.3	E7.5	E7.7		
Abu Dhabi B	C4.1	C2.2	C2.3	C4.2	C4.6	C4.7	C4.8/B4.5A	C4.9	C4.10/C3.5		
Ajman D	C2.1	A1.2	A1.3	C2.4	C2.5	C2.6	C2.7	C2.8	C2.9		
Rais Al Khaimah	A1.1	A4.1	A4.2	C4.4	A1.4	A1.5	A1.6	A1.7	A1.8		
Umm Al kwain	A2.1	D1.2	D1.3	A2.2	A2.3	A2.4	A2.5	A2.6	A2.7		
Sheikh Rachid A	D1.1	C3.1	C3.2	A5.1	A5.2	D1.4A	D1.4B	D1.5	D1.6		
Al Ain J	B1.1	E3.1	E3.2	B1.2	B1.3	B1.4	B1.5	C3.4	E8.1		
Abu Dhabi A	A7.1	D5.1	D5.2	A7.2	A7.3	E3.3	E3.6	E3.4	D5.4		
Al Ain A	E5.1	B2.1	B2.2	D5.2	E5.3	D5.3	E9.2	E5.4	E5.5		
Al Ain B	D6.1	E1.2	E1.3	B2.3	B2.4	B2.5	B2.6	D6.3	B2.7		
Al Ain F	E1.1	D4.2	D4.3	E1.4	E1.5	E1.6	E1.7		E1.9		
Sharja A	D4.1	E6.4	E6.1	D3.1	D3.2A	D4.4	D4.5	D3.2B	D3.3		
Sharja D	E2.1	E2.2	E2.3/GTS.4	E6.2	B5.2	B5.3	B6.2	B6.3	E6.1		
Dubai C	B2.8/GTS.3	E2.2	E2.4	E2.4	E6.5/GTS.1	C3.3	B4.9/GTS.5	B1.6	B3.9/GTS.2		
Dubai D						E4.1	E4.2	E4.3			
Ajman A								E1.8			
ISZ											

Category A: Science & Exploration
A1--> A7

Category C: Technology
C1--> C4

Category E: Space & Society
E1--> E9

Category B: Applications & Operations
B1--> B6

Category D: Infrastructure
D1--> D6

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3.2 Congress Technical Sessions by Day

Monday, 25 October 2021

15:15 Technical Sessions		
No.	Title	Room
A1.1	Behaviour, Performance and Psychosocial Issues in Space	Umm Al Kwain
A2.1	Gravity and Fundamental Physics	Sheikh Rachid A
A3.1	Space Exploration Overview	Sheikh Maktoum A
A6.1	Space Debris Detection, Tracking and Characterization - SST	Sheikh Rachid C
A7.1	Space Agency Strategies and Plans	Al Ain A
B1.1	International Cooperation in Earth Observation Missions	Abu Dhabi A
B2.8-GTS.3	Space Communications and Navigation Global Technical Session	Dubai D
B3.1	Governmental Human Spaceflight Programmes (Overview)	Sheikh Maktoum B
B4.2	Small Space Science Missions	Sheikh Rachid D
B5.1	Tools and Technology in Support of Integrated Applications	Abu Dhabi B
C1.1	Guidance, Navigation and Control (1)	Sheikh Maktoum C
C2.1	Space Structures I - Development and Verification (Space Vehicles and Components)	Rais Al Khaimah
C4.1	Liquid Propulsion (1)	Ajman D
D1.1	Innovative and Visionary Space Systems	Al Ain J
D2.1	Launch Vehicles in Service or in Development	Sheikh Maktoum D
D4.1	Innovative Concepts and Technologies	Sharja D
D6.1	Commercial Spaceflight Safety and Emerging Issues	Al Ain F
E1.1	Ignition - Primary Space Education	Sharja A
E2.1	Student Conference - Part 1	Dubai C
E5.1	Space Architecture: Habitats, Habitability, and Bases	Al Ain B

Tuesday, 26 October 2021

09:45 Technical Sessions		
No.	Title	Room
A1.2	Human Physiology in Space	Umm Al Kwain
A3.2A	Moon Exploration – Part 1	Sheikh Maktoum A
A4.1	SETI 1: SETI Science and Technology	Sheikh Rachid A
A6.9	Orbit Determination and Propagation - SST	Sheikh Rachid C
B2.1	Advances in Space-based Communication Systems and Services, Part 1	Al Ain F
B3.2	Commercial Human Spaceflight Programmes	Sheikh Maktoum B
B4.1	22nd Workshop on Small Satellite Programmes at the Service of Developing Countries	Sheikh Rachid D
C1.2	Guidance, Navigation and Control (2)	Sheikh Maktoum C
C2.2	Space Structures II - Development and Verification (Deployable and Dimensionally Stable Structures)	Rais Al Khaimah

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

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INTRODUCTION

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No.	Title	Room
C3.1	Solar Power Satellite	Abu Dhabi A
C4.3	Solid and Hybrid Propulsion (1)	Ajman D
D1.2	Space Systems Architectures	Al Ain J
D2.2	Launch Services, Missions, Operations, and Facilities	Sheikh Maktoum D
D4.2	Contribution of Moon Village to Solving Global Societal Issues	Sharja D
D5.1	Quality and Safety, always a beginning!	Al Ain B
E1.2	Lift Off - Secondary Space Education	Sharja A
E2.2	Student Conference - Part 2	Dubai D
E3.1	International cooperation in using space for sustainable development: Towards a 'Space2030' agenda	Al Ain A
E6.4	Strategic Risk Management for Successful Space & Defence Programmes	Dubai C
E7.1	IISL Young Scholars session and Dr. Jasentuliyana Keynote lecture by a leading space law expert	Abu Dhabi B

14:45 Technical Sessions

No.	Title	Room
A1.3	Medical Care for Humans in Space	Umm Al Kwain
A3.2B	Moon Exploration – Part 2 + Special Panel “Space, Moon and Mars: Inspiration and Discovery for Society, Humanities and Arts”	Sheikh Maktoum A
A4.2	SETI 2: SETI and Society	Sheikh Rachid A
A6.4	Mitigation - Tools, Techniques and Challenges - SEM	Sheikh Rachid C
B2.2	Advances in Space-based Communication Systems and Services, Part 2	Al Ain F
B3.3	Utilization & Exploitation of Human Spaceflight Systems	Sheikh Maktoum B
B4.3	Small Satellite Operations	Sheikh Rachid D
B6.1	Ground Operations - Systems and Solutions	Dubai C
C1.3	Guidance, Navigation & Control (3)	Sheikh Maktoum C
C2.3	Space Structures - Dynamics and Microdynamics	Rais Al Khaimah
C3.2	Wireless Power Transmission Technologies and Application	Abu Dhabi A
C4.5	Electric Propulsion (1)	Ajman D
D1.3	Technologies to Enable Space Systems	Al Ain J
D2.3	Upper Stages, Space Transfer, Entry & Landing Systems	Sheikh Maktoum D
D4.3	Space Elevator as Transportation Infrastructure to Access Space	Sharja D
E1.3	On Track - Undergraduate Space Education	Sharja A
E2.3-GTS.4	Student Team Competition	Dubai D
E3.2	The future of space exploration and innovation	Al Ain A
E5.2	Is Space R&D Truly Fostering A Better World For Our Future?	Al Ain B
E7.2	International cooperation on the way to the Moon and Mars	Abu Dhabi B

Wednesday, 27 October 2021

09:45 Technical Sessions

No.	Title	Room
A2.2	Fluid and Materials Sciences	Sheikh Rachid A
A3.3A	Mars Exploration – missions current and future	Sheikh Maktoum A
A5.1	Human Exploration of the Moon and Cislunar Space	Al Ain J
A6.3	Impact-Induced Mission Effects and Risk Assessments	Sheikh Rachid C
A7.2	Science Goals and Drivers for Future Exoplanet, Space Astronomy and Space Physics	Al Ain A
B1.2	Future Earth Observation Systems	Abu Dhabi A
B2.3	Advances in Space-based Communication Systems and Services, Part 3	Al Ain F
B3.4-B6.4	Flight & Ground Operations aspects of Human Spaceflight - Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia	Sheikh Maktoum B
B4.4	Small Earth Observation Missions	Sheikh Rachid D
B6.4-B3.4	Flight & Ground Operations of HSF Systems - A Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia	Sheikh Maktoum B
C1.4	Mission Design, Operations & Optimization (1)	Sheikh Maktoum C
C2.4	Advanced Materials and Structures for High Temperature Applications	Rais Al Khaimah
C4.2	Liquid Propulsion (2)	Ajman D
C4.4	Solid and Hybrid Propulsion (2)	Umm Al Kwain
D2.4	Future Space Transportation Systems	Sheikh Maktoum D
D3.1	Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development	Sharja D
D5.2	Knowledge management in the digital transformation	Al Ain B
E1.4	In Orbit - Postgraduate Space Education	Sharja A
E2.4	Educational Pico and Nano Satellites	Dubai D
E6.2	Finance and Investment: The Practitioners' Perspectives	Dubai C
E7.3	A new look at (how far are we with) Space Traffic Management	Abu Dhabi B

14:45 Technical Sessions

No.	Title	Room
A1.4	Medicine in Space and Extreme Environments	Umm Al Kwain
A2.3	Microgravity Experiments from Sub-Orbital to Orbital Platforms	Sheikh Rachid A
A3.3B	Mars Exploration – Science, Instruments and Technologies	Sheikh Maktoum A
A5.2	Human Exploration of Mars	Al Ain J
A6.2	Modeling and Risk Analysis	Sheikh Rachid C
A7.3	Technology Needs for Future Missions, Systems, and Instruments	Al Ain A
B1.3	Earth Observation Sensors and Technology	Abu Dhabi A
B2.4	Advances in Space-based Communication Technologies, Part 1	Al Ain F
B3.5	Astronaut Training, Accommodation, and Operations in Space	Sheikh Maktoum B
B4.5	Access to Space for Small Satellite Missions	Sheikh Rachid D
B5.2	Integrated Applications End-to-End Solutions	Dubai C

No.	Title	Room
C1.5	Mission Design, Operations & Optimization (2)	Sheikh Maktoum C
C2.5	Advancements in Materials Applications and Rapid Prototyping	Rais Al Khaimah
C4.6	Electric Propulsion (2)	Ajman D
D2.5	Technologies for Future Space Transportation Systems	Sheikh Maktoum D
D3.2A	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Systems	Sharja D
E1.5	Enabling the Future - Developing the Space Workforce	Sharja A
E5.3	Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach	Al Ain B
E6.5-GTS.1	Entrepreneurship Around the World	Dubai D
E7.4	The relations between Trade Law, Finance and Space Law	Abu Dhabi B

Thursday, 28 October 2021

09:45 Technical Sessions		
No.	Title	Room
A1.5	Radiation Fields, Effects and Risks in Human Space Missions	Umm Al Kwain
A2.4	Science Results from Ground Based Research	Sheikh Rachid A
A3.4A	Small Bodies Missions and Technologies (Part 1)	Sheikh Maktoum A
A5.3-B3.6	Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia	Sheikh Maktoum B
A6.5	Post Mission Disposal and Space Debris Removal 1 - SEM	Sheikh Rachid C
B1.4	Earth Observation Data Management Systems	Abu Dhabi A
B2.5	Advances in Space-based Communication Technologies, Part 2	Al Ain F
B3.6-A5.3	Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia	Sheikh Maktoum B
B4.6A	Generic Technologies for Small/Micro Platforms	Sheikh Rachid D
B5.3	Satellite Commercial Applications	Dubai C
C1.6	Orbital Dynamics (1)	Sheikh Maktoum C
C2.6	Space Environmental Effects and Spacecraft Protection	Rais Al Khaimah
C3.3	Advanced Space Power Technologies	Dubai D
C4.7	Hypersonic Air-breathing and Combined Cycle Propulsion, and Hypersonic Vehicle	Ajman D
D1.4A	Space Systems Engineering - Methods, Processes and Tools (1)	Al Ain J
D2.6	Future Space Transportation Systems Verification and In-Flight Experimentation	Sheikh Maktoum D
D4.4	Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond	Sharja D
D5.3	Prediction, Testing, Measurement and Effects of space environment on space missions	Al Ain B
E1.6	Calling Planet Earth - Space Outreach to the General Public	Sharja A
E3.3	Space Economy - New models and economic approaches for private space ventures, with an emphasis on the needs of emerging space nations	Al Ain A
E4.1	Memoirs & Organisational Histories	Ajman A

13:15 Interactive Presentations

No.	Title	Room
A1.IP	Interactive Presentations - IAF/IAA Space Life Sciences Symposium	IP Area
A2.IP	Interactive Presentations - IAF Microgravity Sciences and Processes Symposium	IP Area
A3.IP	Interactive Presentations - IAF Space Exploration Symposium	IP Area
A5.IP	Interactive Presentations - 24th IAA Symposium on Human Exploration of the Solar System	IP Area
A6.IP	Interactive Presentations - 19th IAA Symposium on Space Debris	IP Area
B1.IP	Interactive Presentations - IAF Earth Observation Symposium	IP Area
B2.IP	Interactive Presentations - IAF Space Communications and Navigation Symposium	IP Area
B3.IP	Interactive Presentations - IAF Human Spaceflight Symposium	IP Area
B4.IP	Interactive Presentations - 28th IAA Symposium on Small Satellite Missions	IP Area
B6.IP	Interactive Presentations - IAF Space Operations Symposium	IP Area
C2.IP	Interactive Presentations - IAF Materials and Structures Symposium	IP Area
C3.IP	Interactive Presentations - IAF Space Power Symposium	IP Area
C4.IP	Interactive Presentations - IAF Space Propulsion Symposium	IP Area
D1.IP	Interactive Presentations - IAF Space Systems Symposium	IP Area
D2.IP	Interactive Presentations - IAF Space Transportation Solutions and Innovations Symposium	IP Area
D3.IP	Interactive Presentations - 19th IAA Symposium on Building Blocks for Future Space Exploration and Development	IP Area
D4.IP	Interactive Presentations - 19th IAA Symposium on Visions and Strategies for the Future	IP Area
E1.IP	Interactive Presentations - IAF Space Education and Outreach Symposium	IP Area
E3.IP	Interactive Presentations - 34th IAA Symposium on Space Policy, Regulations and Economics	IP Area
E5.IP	Interactive Presentations - 32nd IAA Symposium on Space and Society	IP Area
E7.IP	Interactive Presentations - IISL Colloquium on The Law of Outer Space	IP Area
E9.IP	Interactive Presentations - IAF Symposium on Space Security	IP Area

14:45 Technical Sessions

No.	Title	Room
A1.6	Astrobiology and Exploration	Umm Al Kwain
A2.5	Facilities and Operations of Microgravity Experiments	Sheikh Rachid A
A3.5	Solar System Exploration including Ocean Worlds	Sheikh Maktoum A
A6.6	Post Mission Disposal and Space Debris Removal 2 - SEM	Sheikh Rachid C
B1.5	Earth Observation Applications, Societal Challenges and Economic Benefits	Abu Dhabi A
B2.6	Advances in Space-based Navigation Systems, Services, and Applications	Al Ain F
B3.7	Advanced Systems, Technologies, and Innovations for Human Spaceflight	Sheikh Maktoum B
B4.5A-C4.8	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	Ajman D
B4.7	Constellations and Distributed Systems	Sheikh Rachid D
B4.9-GTS.5	Small Satellite Missions Global Technical Session	Dubai D
B6.2	New Space Operations Concepts and Advanced Systems	Dubai C
C1.7	Orbital Dynamics (2)	Sheikh Maktoum C
C2.7	Space Vehicles – Mechanical/Robotic/Thermal/Fluidic Systems	Rais Al Khaimah
C4.8-B4.5A	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	Ajman D
D1.4B	Space Systems Engineering - Methods, Processes and Tools (2)	Al Ain J
D2.7	Small Launchers: Concepts and Operations	Sheikh Maktoum D

No.	Title	Room
D4.5	Space Resources, the Enabler of the Earth-Moon Ecosphere	Sharja D
E1.7	New Worlds - Non-Traditional Space Education and Outreach	Sharja A
E3.6	Economics of Procurement in Space Contracting	Al Ain A
E4.2	Scientific and Technical Histories	Ajman A
E6.3	Innovation: The Academics' Perspectives	Abu Dhabi B
E9.2	Cyber-based security threats to space missions: establishing the legal, institutional and collaborative framework to counteract them	Al Ain B
GTS.5-B4.9	Small Satellite Missions Global Technical Session	Dubai D

Friday, 29 October 2021

09:45 Technical Sessions

No.	Title	Room
A1.7	Life Support, habitats and EVA Systems	Umm Al Kwain
A2.6	Microgravity Sciences on board ISS and beyond	Sheikh Rachid A
A3.2C	Moon Exploration – Part 3	Sheikh Maktoum A
A5.4-D2.8	Space Transportation Solutions for Deep Space Missions	Sheikh Maktoum D
A6.8-E9.1	Political, Legal, Institutional and Economic Aspects of Space Debris Mitigation and Removal - STM Security	Sheikh Rachid C
B1.6	21st Anniversary of the Disaster Charter: History, Status and Future of this Powerful and Productive International Cooperation	Dubai D
B3.8	Human Space & Exploration	Sheikh Maktoum B
B4.8	Small Spacecraft for Deep-Space Exploration	Sheikh Rachid D
B6.3	Mission Operations, Validation, Simulation and Training	Dubai C
C1.8	Attitude Dynamics (1)	Sheikh Maktoum C
C2.8	Specialized Technologies, Including Nanotechnology	Rais Al Khaimah
C3.4	Space Power System for Ambitious Missions	Abu Dhabi A
C4.9	New Missions Enabled by New Propulsion Technology and Systems	Ajman D
D1.5	Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards.	Al Ain J
D2.8-A5.4	Space Transportation Solutions for Deep Space Missions	Sheikh Maktoum D
D3.2B	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies	Sharja D
D6.3	Enabling safe commercial spaceflight: vehicles and spaceports	Al Ain F
E1.8	Hands-on Space Education and Outreach	International Student Zone
E3.4	Assuring a Safe, Secure and Sustainable Environment for Space Activities	Al Ain A
E4.3	History of Middle Eastern Contribution to Astronautics and Astronomy	Ajman A
E5.4	Space Assets and Disaster Management	Al Ain B
E7.5	National space law and security – an update	Abu Dhabi B
E9.1-A6.8	Political, Legal, Institutional and Economic Aspects of Space Debris Mitigation and Removal - STM Security	Sheikh Rachid C

13:30 Technical Sessions

No.	Title	Room
A1.8	Biology in Space	
A2.7	Life and Physical Sciences under reduced Gravity	Sheikh Rachid A
A3.4B	Small Bodies Missions and Technologies (Part 2)	Sheikh Maktoum A
A6.10-B6.5	Joint Space Operations / Space Debris Session – STM Operations	Sheikh Maktoum B
A6.7	Operations in Space Debris Environment, Situational Awareness - SSA	Sheikh Rachid C
B2.7	Advances in Space-based Navigation Technologies	Al Ain F
B3.9-GTS.2	Human Spaceflight Global Technical Session	Dubai D
B4.6B	Generic Technologies for Nano/Pico Platforms	Sheikh Rachid D
C1.9	Attitude Dynamics (2)	Sheikh Maktoum C
C2.9	Smart Materials and Adaptive Structures	Rais Al Khaimah
C3.5-C4.10	Joint Session on Advanced and Nuclear Power and Propulsion Systems	Ajman D
C4.10-C3.5	Joint Session on Advanced and Nuclear Power and Propulsion Systems	Ajman D
D1.6	Cooperative and Robotic Space Systems	Al Ain J
D2.9-D6.2	Emerging Global Space Ventures, including Reusability and other Innovations	Sheikh Maktoum D
D3.3	Space Technology and System Management Practices and Tools	Sharja D
D5.4	Cybersecurity in space systems, risks and countermeasures	Al Ain A
D6.2-D2.9	Emerging Global Space Ventures, including Reusability and other Innovations	Sheikh Maktoum D
E1.9	Space Culture – Public Engagement in Space through Culture	Sharja A
E5.5	Sharing space achievements and heritage: space museums and societies	Al Ain B
E6.1	Entrepreneurship and Innovation: The Practitioners' Perspectives	Dubai C
E7.7	NewSpace and Space Law	Abu Dhabi B
E8.1	Multilingual Astronautical Terminology	Abu Dhabi A



4 Keynote Speakers

Keynotes

Monday 25 October

B1.1	IAF EARTH OBSERVATION SYMPOSIUM	Date	Time	Room
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Session: International Cooperation in Earth Observation Missions

2021-10-25

15:15

Abu Dhabi A

Karen St. Germain

Director for Earth Science

National Aeronautics and Space Administration (NASA)
United States

KEYNOTE: Committee on Earth Observation Satellites (CEOS): 2021 Report of Activities to the International Astronautical Congress

Abstract

As the CEOS Chair, NASA will provide an overview of the ongoing activities of CEOS. 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 has 34 Members & 27 Associates from all over the world who are operating 171 satellites - bringing them together to collaborate on missions, data systems, and global initiatives that benefit society and align with their own Agency missions and priorities. Over the past year, CEOS has significantly contributed to the advancement of space-based Earth observation community efforts. CEOS Agencies thrust development of the Group on Earth Observations (GEO). CEOS Agencies work together to launch multi-agency collaborative missions, and such cooperative efforts have highly benefited users all around the world. CEOS also provides an established means of communicating with external organizations, enabling CEOS to understand and act upon these organizations' Earth observation needs and requirements. NASA will outline the key initiatives undertaken in 2021 by the CEOS Chair and CEOS Strategic Implementation Team and present important highlights of the CEOS organization.

B3.1	IAF HUMAN SPACEFLIGHT SYMPOSIUM	Date	Time	Room
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Session: Governmental Human Spaceflight Programmes (Overview)

2021-10-25

15:15

Sheikh Maktoum B

James Free

Administrator for Exploration Systems Development,
National Aeronautics and Space Administration (NASA)

KEYNOTE: NASA's Plans for Human Space Exploration

Abstract

NASA will maintain continuity of purpose and direction in our human space exploration programs. Plans for enabling the development of a low-Earth orbit economy and sustainable human lunar exploration are in full motion. Building on momentum from many successful achievements over the last year, including the realization of the commercial crew program, the landing of the Mars Perseverance rover on the Red Planet, production milestone completion of early Artemis systems, and the celebration of 20 years of continuous operations aboard the International Space Station, the agency is prepared for the important work that lies ahead. This paper will examine how NASA will 1) continue commercial Low-Earth Orbit development, 2) prepare for exploration of the Moon using the Space Launch System (SLS) rocket and Orion spacecraft on the upcoming Artemis I mission, with a crewed mission following shortly thereafter, 3) build the Gateway in orbit around the Moon enabling new capabilities in deep space, 4) begin development of our commercial-built human landing system, 5) use the Moon's unique environment to perform science that will advance our understanding of Earth and our solar system, 6) focus on innovation and problem solving to prepare humanity for future exploration while benefitting all of our lives on Earth, and 7) move deeper into the solar system with industry, academic, and international partners who have a shared ambition to explore more of the solar system than ever before.

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B3.1	IAF HUMAN SPACEFLIGHT SYMPOSIUM	Date	Time	Room
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Session: Governmental Human Spaceflight Programmes (Overview) 2021-10-25 15:45 Sheikh Maktoum B

David Parker
 Director of Human and Robotic Exploration
 European Space Agency (ESA/ESTEC)
 The Netherlands

KEYNOTE: Human Spaceflight within ESA's Space Exploration Programme for the next Decade

Abstract

ESA's space exploration activities were integrated in 2016 into a single programme, the European Space Exploration Envelope Programme. This programme includes the operations and utilisation of the International Space Station in Low Earth Orbit (LEO) as well as robotic and human missions to cis-lunar space, Moon and Mars. The Council Meeting at Ministerial level in 2019 made important decisions to prepare the next decade of space exploration and to shape the European exploration profile for all exploration destinations. With the ISS at the core of human spaceflight, no major new developments have been initiated for human platforms in LEO. However, ESA has increased its efforts to support the development of a LEO economy through the establishment of industrial services enabling access to ISS for commercial customers and to stimulate non-ESA funded demand for such services. The most visible flagship project of the ESA commercialisation initiative, the Airbus built Bartolomeo platform, has been installed on the European Columbus module in March 2020 and commercial operations are starting in 2021. Specifically, in the field of human exploration, the development of two European-led elements of the NASA-led lunar Gateway – an international habitat as well as a robotic element for refuelling, science and communication – and the continued production of the European Service Module for the NASA Orion system have all been decided. These elements secure the first European Astronaut missions to cis-lunar space and open access to European scientists to human-assisted science and research in deep space and eventually on the lunar surface. Furthermore, important preparatory activities are starting in the ongoing programme period to position Europe in the international industrial landscape providing lunar mission support services. ESA is studying two alternative transportation services for delivering cargo and science to the lunar gateway or directly to the lunar surface as well as the deployment of a lunar spacecraft constellation for providing broadband communication and navigation services. Activities are also intensified around lunar resource management. European contributions to the Mars Sample Return campaign in partnership with NASA are being developed for the next leap in understanding the red planet after the European flagship mission ExoMars. The next decade of exploration will further mature European capabilities, enable a sustained lunar presence and prepare ESA for the horizon goal of human missions to Mars.

Tuesday 26 October

B4.3	28th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS	Date	Time	Room
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Session: Small Satellite Operations 2021-10-26 14:45 Sheikh Rachid D

Jeff Parker
 Chief Technology Officer
 Advanced Space
 United States

KEYNOTE: CAPSTONE: Pathfinder for the Lunar Gateway

Abstract

Advanced Space has partnered with NASA to develop and build the Cis-lunar Autonomous Positioning System Technology Operations and Navigation Experiment (CAPSTONE) mission which will serve as a pathfinder for Near Rectilinear Halo Orbit (NRHO) operations around the Moon. The NRHO is the intended orbit for the NASA's Gateway lunar orbital platform – as such the CAPSTONE mission will validate simulations and confirm operational planning for Gateway while also validating performance of navigation and station-keeping for future operations. This low cost, high value mission will demonstrate an efficient low energy orbital transfer to the lunar vicinity and an insertion and operations approach to the NRHO that ultimately will demonstrate a risk reducing validation of key exploration operations and technologies required for the future success of NASA's lunar exploration plans, including the planned human return to the lunar surface. This paper and presentation will include the current mission status leading up to launch, the operations plan for the NRHO, and lessons learned to date in order to inform future CubeSat pathfinders in support of national exploration and scientific objectives. CAPSTONE will fly a 12U cubesat developed, integrated, and tested by Tyvak Nanosatellite Systems carrying a payload communications system capable of cross-link ranging with the Lunar Reconnaissance Orbiter (LRO), a dedicated payload flight computer for software demonstration, and a camera. The cross-link ranging and software demonstration will provide critical demonstration of the Cis-lunar Autonomous Positioning System (CAPS) to enable peer-to-peer navigation for future lunar missions. CAPSTONE is contracted to launch with Rocket Lab and will be launched in 2021. Upon launch, the spacecraft will traverse a highly efficient transfer taking approximately three months to enter a primary demonstration phase in an NRHO for six months followed by a twelve-month technology enhancement operations phase. The CAPSTONE mission is funded through NASA's Small Spacecraft Technology Program (SSTP), which is one of several programs in NASA's Space Technology Mission Directorate. SSTP is chartered to develop and demonstrate technologies to enhance and expand the capabilities of small spacecraft with a particular focus on enabling new mission architectures through the use of small spacecraft, expanding the reach of small spacecraft to new destinations, and augmenting future missions with supporting small spacecraft.


Wednesday 27 October

E1.4	IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM	Date	Time	Room
	<p>Session: In Orbit - Postgraduate Space Education</p> <p>Filippo Graziani <i>President, Italian company Group of Astrodynamics for the Use of Space Systems (G.A.U.S.S. srl)</i> <i>Senior Professor of Astrodynamics, University of Roma "La Sapienza", Scuola di Ingegneria Aerospaziale</i> G.A.U.S.S. Srl Italy</p>	2021-10-26	09:45	Sharja A

KEYNOTE: UniSat Platform and Lunar-Mars Mission in GAUSS

Abstract

This paper presents the evolution of Astrodynamics from theoretical to practical approach which GAUSS S.r.l company (Group of Astrodynamics for the Use of Space Systems) carried on for more than thirty years along with Scuola di Ingegneria Aerospaziale of Roma, evolving from a merely didactical dimension to an innovative company reality. Astrodynamics is usually defined as celestial mechanics applied to engineering. The methodology used to study the Astrodynamics problems has two different approaches: one is more mathematical, and the other is an "engineering approach" that allows to "see" the practical results besides being able to formulate it. During all these years I tried to apply an "engineering approach". This methodology could inspire the students and make them passionate about the Astrodynamics. It is the transition from theory to practice in the field of Astrodynamics: Astrodynamics applied to engineering problems, that is Applied Astrodynamics. The applications were focused on satellites low-cost, small and simply manufactured by university students. (University satellites). Later the size of these satellites changed and were proposed different kind of satellites even smaller due to the electronic components miniaturization, especially micro, nano, pico and femto satellites, intended as CubeSat and PocketQube. We can notice that while Cubesats have attracted university students and teachers due to their accessibility and have become an exciting way to gain experience, for long time they were considered "students toys". Nobody could believe in their development and their possibilities. However, the results obtained by universities opened the doors to the commercial use of CubeSats. The interest in CubeSats is moving now from universities to industry and the interest of "big" players increases investments which make CubeSats more powerful. As they are getting more industry-oriented, the whole process of satellite development is becoming more and more conventional in technical terms. This trend evidences the importance of the CubeSat in this field. It is now time to face new challenges in the study of astrodynamics: the possibility of reaching planets through low energy orbits, the use of electric propulsion, green propellant, different type of material to manufacture satellites, as wooden highly resistant to temperature changes and sunlight. For example, a Japanese company and Kyoto University propose to launch in 2023 a satellite totally made by wood (LIGNOSAT).

A3.3B	IAF SPACE EXPLORATION SYMPOSIUM	Date	Time	Room
	<p>Session: Mars Exploration – Science, Instruments and Technologies</p> <p>Mariam AlShamsi <i>Space Science Department Director</i> Mohammed Bin Rashid Space Centre (MBRSC) United Arab Emirates</p>	2021-10-27	14:45	Sheikh Maktoum A

KEYNOTE: Emirates Mars Mission: Science Instrument Overview

Abstract

The Emirates Mars Mission (EMM) launched in July 2020 and has successfully entered Mars Orbit on 9th of February 2021 to explore the diurnal and seasonal dynamics of the Martian atmosphere on a global scale. The Observatory has three scientific instruments on board; the Emirates Exploration Imager (EXI) and Emirates Mars Infrared Spectrometer (EMIRS), will investigate the lower atmospheric constituents: dust, ice clouds, water vapor, ozone, and the three-dimensional global thermal structure of both the lower atmosphere and the surface. The Emirates Mars Ultraviolet Spectrometer (EMUS) will observe the upper atmosphere, enabling important links between the lower atmospheric dynamics and the thermosphere and exosphere of the planet to be explored. This presentation will include an overview of the EMIRS Instrument characteristics and its scientific importance for the The Emirates Mars Mission (EMM) launched in July 2020 and successfully entered Mars Orbit on 9th of February 2021 to explore the diurnal and seasonal dynamics of the Martian atmosphere on a global scale. The Observatory has three scientific instruments on board: the Emirates eXploration Imager (EXI), Emirates Mars Infrared Spectrometer (EMIRS), and the Emirates Mars Ultraviolet Spectrometer (EMUS). EXI and EMIRS will investigate the lower atmospheric constituents of dust, ice clouds, water vapor, and ozone as well as the three-dimensional global thermal structure of both the lower atmosphere and the surface. EMUS will observe the upper atmosphere, enabling important links between the lower atmospheric dynamics and the thermosphere and exosphere. The EMIRS instrument is a collaboration between MBRSC and ASU.

B4.5	28th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS	Date	Time	Room
	Session: Access to Space for Small Satellite Missions  Lars Hoffman Senior Vice President of Global Launch Services Rocket Lab United States	2021-10-27	14:45	Sheikh Rachid D

KEYNOTE: Speed To Space: Dedicated Launch for Small Satellites on Electron

Abstract

The demand for dedicated small satellite launches has reached an inflection point in recent years as advancements in technologies have led to the capability of small spacecraft to support large-scale civil, commercial, and national security missions and programs. Speed to space has become paramount, and yet industry reports indicate that small satellites booked on commercial missions in the past five years have experienced a median launch delay of 128 days caused by slow launch vehicle development, delays in launch vehicle manufacturing, administrative or programmatic delays, and delays with the development of the payload itself. As the world's leading small launch services provider, Rocket Lab's dedicated mission service has successfully placed multiple small satellites on orbit within aggressive time frames, on schedule, and at an affordable cost relative to the payload's mission objectives. Dedicated launches onboard Rocket Lab's Electron launch vehicle within the past 18 months include: a launch to low-Earth orbit for German aerospace manufacturer OHB Group, whose single communication microsatellite was successfully deployed to orbit by Rocket Lab within six months of contract signing; the successful deployment of the first of a series of spacecraft for a planned constellation of more than 30 synthetic aperture radar (SAR) small satellites for Japanese commercial start-up Synspec; and a dedicated launch for the United States National Reconnaissance Office (NRO), the first of its kind outside of the United States. This presentation will detail the successes and lessons learned of Rocket Lab's multiple dedicated launches to date for national security and commercial satellite operators; and summarize Rocket Lab's progression in expanding its capabilities to allow for 100+ launch opportunities every year.

Thursday 28 October

C1.6	IAF ASTRODYNAMICS SYMPOSIUM	Date	Time	Room
	Session: Orbital Dynamics (1)  Martin Lara Professor Universidad de La Rioja Spain	2021-10-28	09:45	Sheikh Maktoum C

KEYNOTE: On Perturbation Solutions in the Restricted Three-Body Problem Dynamics

Abstract

The well-known lack of existence of enough integrals to provide a closed form solution to the restricted three-body problem makes approaching it with numerical methods customary. However, useful approximate analytical solutions of this problem can be constructed in particular regions of phase space with the help of perturbation methods. A brief description of three different cases of interest in astrodynamics illustrates the possibilities of the perturbation approach in mission planning of space orbits. Namely, the motion inside the sphere of influence of the primary of smaller mass, which applies to science orbits about planetary satellites, can be approached like the classical case of perturbed Keplerian motion. The motion about the libration points, where the conspicuous Lyapunov and Halo orbits exist, can be treated like a case of perturbed elliptic oscillations. Finally, the co-orbital motion of the satellite and the smaller-mass primary about the primary of bigger mass which gives rise to the so-called quasi-satellite orbits, is a particular case of co-orbital motion with low eccentricity that can be described in terms of perturbed harmonic oscillations.

C4.8-B4.5A	IAF SPACE PROPULSION SYMPOSIUM	Date	Time	Room
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Session: Joint Session between IAA and IAF for Small Satellite Propulsion Systems

2021-10-28

14:45

Ajman D

Mirko Magarotto

Researcher

University of Padova - DII/CISAS
Italy

KEYNOTE: Electric Propulsion for CubeSats: a Review

Abstract

CubeSats have become increasingly common in recent years because they allow to access space at a markedly lower cost than classical medium-to-large systems. Many universities, schools and private companies have taken advantage of the opportunities these satellites provide for placing small payloads into Earth orbit. Nonetheless, the CubeSat technology has developed very rapidly and nowadays it is considered also for commercial applications such as Earth observation and telecommunications. However, the lack of reliable and efficient propulsion subsystems was in the past one of the main blocking points to enable advanced utilisation of CubeSats. In fact, integrating a propulsion system in a CubeSat is a very challenging task because of the intrinsic complexity of a space thruster and the strict constraints and requirements on mass, volume, power and cost of this class of satellites. As a consequence, until 2011, the only Cubesat propelled was the CanX-2 that employed a cold-gas thruster to perform orbital corrections. However, not having a propulsion system is nowadays unacceptable, in particular for CubeSats designed for commercial or scientific purposes. In fact, the capability of accomplishing orbital manoeuvres is necessary to ensure the feasibility and the long-life of these type of missions. For such reasons, research to develop suitable propulsion systems for CubeSats is nowadays extremely active. In this framework, Electric Propulsion (EP) seems particularly promising for missions planned for the near-future as constellations of CubeSats and Solar system exploration. Specifically, it is possible to take full advantage of EP systems in missions in which manoeuvres with high ΔV ($> \$100$ m/s) are required and the time constraint is not a major issue. In fact, the peculiarities of EP systems are: the specific impulse is high (up to 10000 s) and the thrust is low ($< \$1$ N). Some of the more appealing features enabled by EP on commercial CubeSats are orbit change, maintenance, attitude control (with precision pointing), along with constellation phasing, deployment and formation flying. Also de-orbiting operation and drag compensation are possible. On the other hand, the proximity operation, such as collision avoidance, need to be carefully planned because of the low thrust provided by electric systems and, in turn, the lack of a fast response. The aim of this paper is to present a review on the most advanced concepts of EP systems for CubeSats available on the market. Moreover, the most promising technologies for the near-future and mid-future will be discussed.

D2.7	IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM	Date	Time	Room
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Session: Small Launchers: Concepts and Operations

2021-10-28

14:45

Sheikh Maktoum D

Chris Kemp

CEO

ASTRA

United States

KEYNOTE: Building the Infrastructure of Space: Small Launch to Connectivity

Abstract

Last year alone, nearly \$9 billion was invested into space companies, many of which intend to disrupt the industry. What these innovators need are more flights taking their satellites precisely where they need to go. Astra Founder, Chairman and CEO Chris Kemp will share more about the following how they will make this possible. Astra is focused on building the infrastructure that makes innovation possible for entrepreneurs, enterprises and nations. By offering smaller and more frequent launches, Astra is enabling access to Low Earth Orbit, with plans to deliver our first commercial payloads this summer. The vertically integrated manufacturing process in Astra's factory in the heart of Silicon Valley allows Astra to build rockets at scale, and enable customers to achieve rapid launch and replenishment of their constellations in LEO. This will enable a wave of innovation to improve life on Earth through greater connectivity and more regular observation.

E6.3	IAF BUSINESS INNOVATION SYMPOSIUM	Date	Time	Room
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Session: Innovation: The Academics' Perspectives

2021-10-28

14:45

Abu Dhabi B

Jennifer Woolley
Associate Professor
Santa Clara University
United States

KEYNOTE: The Need for Nascent Industry and Ecosystem Infrastructure

Abstract

New industries and ecosystems do not appear fully formed, but require support from a wide range of physical, institutional, and organizational structures. Based on two decades of research on the emergence of nanotechnology and genomics industries, Professor Jennifer Woolley will discuss the different types of infrastructure needed for the success of nascent industry development, particularly commercial space. She will then talk about the heightened commercial opportunities that arise during industry emergence.

Friday 29 October

B1.6	IAF EARTH OBSERVATION SYMPOSIUM	Date	Time	Room
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Session: 21st Anniversary of the Disaster Charter: History, Status and Future of this Powerful and Productive International Cooperation

2021-10-28

09:45

Dubai D GTS

Vincent Decker
Strategic Advisor for Emergency Geomatics
Canada Center for Mapping and Earth Observation
Canada

KEYNOTE: Canada's Emergency Geomatics for Disaster Response: Use Case of the 2019 Floods

Abstract

The catastrophic consequences of climate change on the natural world are becoming profoundly apparent in Canada and globally. Natural disasters such as floods and hurricanes are striking more frequently with greater intensity. Northwestern Canada was recently exposed to a giant heat dome that broke temperature records and created the perfect environment for wildland fires that decimated the town of Lytton in British Columbia. Monitoring natural hazards from space-based earth observation (EO) platforms and sensors is key for effective emergency management, from the practitioner to the policy maker. Since its inception in 2000, the International Disaster Charter has provided satellite imagery for hundreds of natural and man-made disasters. Canada has leveraged the Charter for 14 large scale events. This talk will focus on the record-breaking floods in Québec and Ontario in 2019 and describe how multi source EO derived information created timely situational awareness products.

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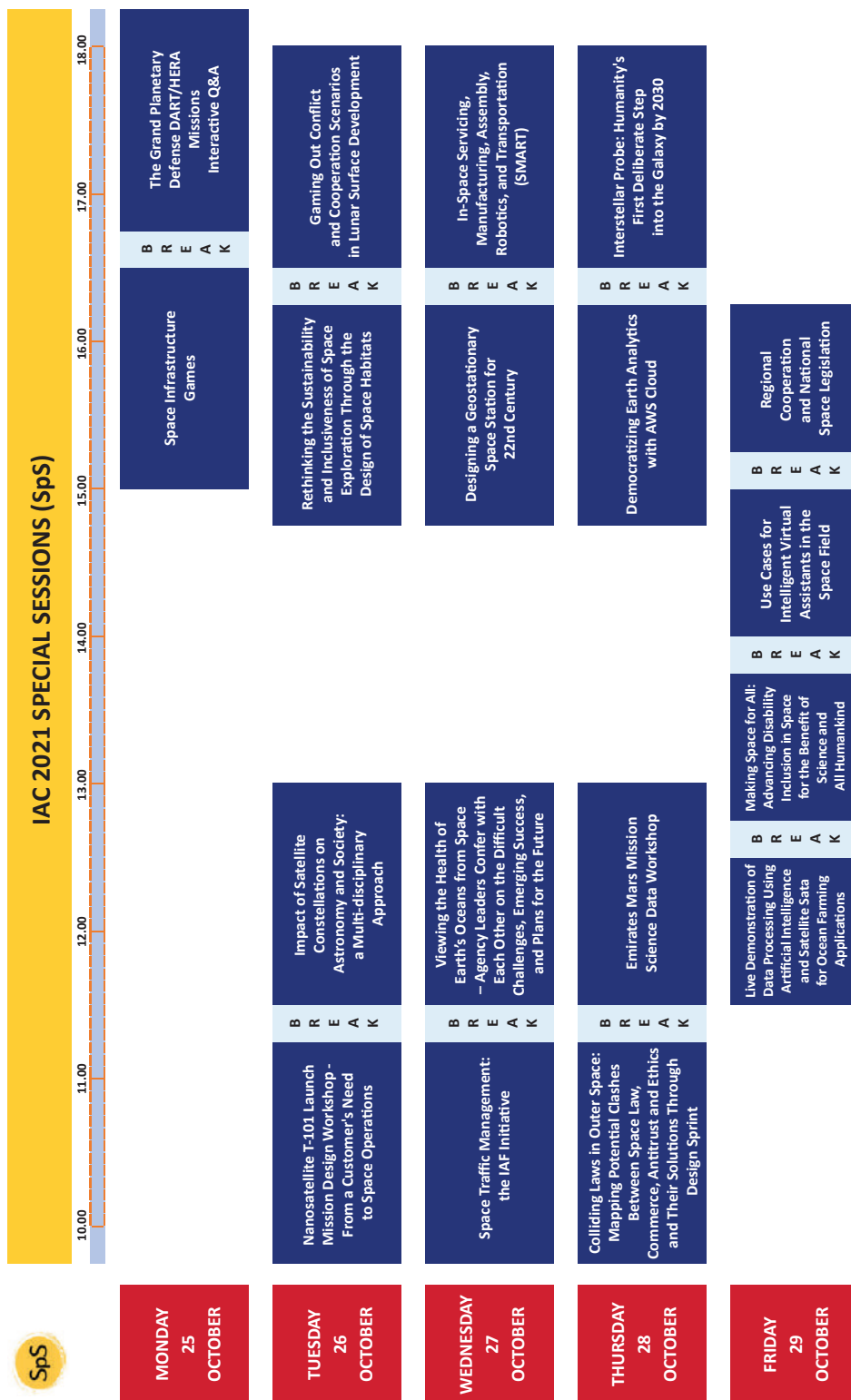
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5 Special Sessions

5.1 Special Sessions at a Glance



5.2 Special Sessions per Day

Reflecting and emphasizing the theme of the IAC 2021 “Inspire, Innovate & Discover for the Benefit of Humankind”, this year’s congress will see again the exciting and fresh format: **Special Sessions**.

The Special Sessions are held as part of the Technical Programme and are designed to be **innovative, interactive, instructive** and **inclusive** with the main objective to enhance knowledge transfer between experts and participants, as well as to maximize **group interaction** and promote **collaborative learning**.

IAC 2021 will feature an extensive range of inspiring and interactive Special Sessions, and will offer new session formats such as Campfires, Design Sprints, Interactive Games and many more. 19 proposals have been accepted among a record number of 87 proposals.

Monday 25 October

15:00 - 16:30 Space Infrastructure Games

Room: Sheikh Rashid B

Format: Interactive Games & Reflection

Organizers/Moderators:



Kevin Barry
Co-Founder,
LightBridge Strategic
Consulting LLC,
United States



Eduardo Pineda
Co-Founder,
LightBridge Strategic
Consulting LLC,
Spain

In a series of interactive games (with prizes) this session will raise your awareness about the economic merits of space infrastructure, specifically on launch and transportation infrastructure needed for development of a space based economy. These games will be enriched with local participants, young professionals, and space leaders/influencers for commentary and discussion about the future of infrastructure development. Stand up and come play to learn about the non-intuitive impacts of space infrastructure!

Speakers:



John C. Mankins
Vice President,
Moon Village Association
(MVA), President,
ARTEMIS Innovation
Management Solutions,
United States



Adnan Al Rais
Senior Director,
Remote Sensing
Department and
Program Manager, Mars
2117, Mohammed
Bin Rashid Space
Centre (MBRSC),
United Arab Emirates



Peter Swan
Senior Vice President,
Galactic Harbour
Associates, Inc.,
United States



Joerg Kreisel
CEO,
JKIC,
Germany

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25-29 October 2021 | Dubai, United Arab Emirates

16:45 - 18:15 The Grand Planetary Defense DART/HERA Missions Interactive Q&A

Room: Sheikh Rashid

Format: Interactive Q & A

Organizers:



Alex Karl
*Operations Engineer,
Space Applications
Services,
Belgium*



Alissa J. Haddaji
*Lecturer on Space Law,
Policy and Ethics,
Harvard University,
United States*

Want to know more about the NASA DART and ESA Hera missions that will perform the first asteroid deflection test using a kinetic impactor? Want to know why and how we do this? Want to know why we care? Join “The Grand Planetary Defense DART/HERA missions Interactive Q&A” and come learn more about everything you have ever wanted to know about asteroid mitigation and plans through a fun Q&A led by world experts and mission members.

Moderator:



Stephan Ulamec
*Philae Project Manager,
Deutsches Zentrum
für Luft- und Raumfahrt
e.V. (DLR),
Germany*

Speakers:



Patrick Michel
*Director of Research,
Centre National
de la Recherche
Scientifique (CNRS),
France*



Mariella Graziano
*Executive Director Space
Systems and Robotics,
GMV Aerospace &
Defence SAU,
Spain*

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Tuesday 26 October

09:45 - 11:15 Nanosatellite T-101 Launch Mission Design Workshop - From a Customer's Need to Space Operations

Room: Sheikh Rashid B

Format: Workshop

Organizers/Moderators:



Camilo Andrés Reyes
Strategic Partnerships,
Space Generation
Advisory Council (SGAC),
Colombia



Marco Romero
National Point of
Contact for Angola,
Space Generation
Advisory Council (SGAC),
Angola



Isaac Garcia
Space Generation Mexico,
Space Generation
Advisory Council (SGAC),
Mexico

“Join us on the journey where you will see a spectacular view of behind the scenes of how most space missions happen.

This session will help you to understand from A to Z a full space mission. You will also get to be part of the mission yourself, where you get to experience the roles behind the scenes. So what are you waiting for? Sign up, and get ready to start your career in space!”

Speaker:



Daniel Sors Raurell
Systems Engineer,
Open cosmos Ltd.,
United Kingdom

11:30 - 13:00 Impact of Satellite Constellations on Astronomy and Society: a Multi-disciplinary Approach

Room: Sheikh Rashid B

Format: Campfire

Organizer/Moderator:



Charlotte Nassey

Assistant Contracts Officer,
ARTES Programme / European Space Agency (Modis),
France

Co-Organizer:



Fatoumata Kebe

Astronomer
Association Ephemerides,
France

This special session will address the impacts of the commercial uses of space on astronomy and the night sky. Following a set of interdisciplinary short speeches, participants will discuss the possible coordination between the stakeholders involved, and balance the conflicting interests at stake. The session gives the opportunity to any stakeholder to share its knowledge and ideas but also to get help on the challenges raised by satellite constellations.

Speakers:



Bernard Foing

Executive Director,
International Lunar Exploration Working Group (ILEWG),
EuroMoonMars, Chair
IAF ITACCUS Committee,
Netherlands



Giuliana Rotola

Implementation Support Officer,
Global Expert Group on Sustainable Lunar Activities (GEGSLA),
Italy



Tanja Masson-Zwaan

Assistant Professor and Deputy Director,
International Institute of Air and Space Law (IIASL), Leiden University,
United States



Laetitia Zarkan

Doctoral Researcher,
SES Chair, AED Cluster
Portugal, University
of Luxembourg,
Luxembourg

14:45 - 16:15 Rethinking the Sustainability and Inclusiveness of Space Exploration Through the Design of Space Habitats

Room: Sheikh Rashid B

Format: Workshop

Organizer/Moderator:



Julie Patarin-Jossec

Lecturer,
Saint Petersburg State University; Associate Fellow at the Centre Emile Durkheim for Comparative Sociology and Political Science, Russia

“Join an interdisciplinary panel to discuss innovative ideas and groundbreaking designs aiming to gender empowerment, cultural diversity and inclusivity in future space exploration. This session will lead us not only to debate on inspiring space habitats projects but also to collectively imagine a sustainable space habitat design through panelists-audience interaction. The session will feature top experts in architectural design, indigenous studies and archaeology – everything else we need is you and your ideas!”

Speakers:



Alice Gorman

Associate Professor,
Flinders University, Australia



Olga Bannova

Research Professor,
University of Houston, United States



Deondre Smiles

Postdoctoral Scholar,
The Ohio State University, United States



Larissa Belcic

Design critic,
Rhode Island School of Design, United States



Jean-François Clervoy

Astronaut and Founder,
AirZeroG, France

16:30 - 18:00 Gaming Out Conflict and Cooperation Scenarios in Lunar Surface Development

Room: Sheikh Rashid B

Format: Workshop

Organizer:



Antonino Salmeri
*Doctoral Researcher
in Space Law,
University of Luxembourg,
Italy*

“Calling all space strategists, explorers, architects, and policy makers! Do you enjoy tabletop, roleplaying, negotiation or strategy games? Are you passionate about managing conflict within international lunar development? The SGAC Space Exploration Project Group has a challenge for you!

This fast-paced, highly interactive strategy and negotiation game simulates international cooperation and competition as nations seek to advance their own lunar infrastructure development alongside one another. Visit our rules packet (bit.ly/SGACgamerules) and arrive early!”

Organizers/Moderators:



Aleksandra Kozawska
*Service Designer
& Founder,
ODIS Design for Space,
Poland*



Adam Marcinkowski
*Systems Engineer,
Lockheed Martin
Corporation,
United States*



Shayna Hume
*PhD Student,
CU Boulder,
United States*



Mohammed Milhim
*Mechanical Engineering
Student,
Jordan University of
Science & Technology,
Jordan*

Wednesday 27 October

09:45 - 11:15 **Space Traffic Management: The IAF Initiative**

Room: Sheikh Rashid B

Format: Workshop

Organizers/Moderators:



Christopher Bonnal
Chair,
 IAF Space Traffic
 Management Committee,
 France



Darren McKnight
Senior Technical Fellow,
 LeoLabs,
 United States

“If you want to know where we stand at international level on the critical topic of Space Traffic Management, if you are worried about safety of current space operations and their sustainability in the future, if you wonder what can be done facing a diverging situation, then come and join us! You’ll hear from a status of the subject, with specific details on the current IAF Technical Committee which gathers 100 members from 20 countries...”

INTRODUCTION

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72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25-29 October 2021 | Dubai, United Arab Emirates

11:30 - 13:00 Viewing the Health of Earth's Oceans from Space – Agency Leaders Confer with Each Other on the Difficult Challenges, Emerging Success, and Plans for the Future

Room: Sheikh Rashid B

Format: Fishbowl

Organizers/Moderators:



James Graf

Director,
Earth Science and
Technology, NASA Jet
Propulsion Laboratory,
United States



Jean-Yves Le Gall

Former President,
Centre National d'Etudes
Spatiales (CNES),
France



Harry Cikanek

Chair,
IAF Earth Observations
Committee,
United States

Earth's Oceans, cover greater than 70% of Earth's surface and contain 90% of Earth's biosphere. They are critical to climate, weather, transportation, food, ecosystem health, biodiversity, and security. Satellites provide unique, critical information for understanding how Oceans are responding and, in some cases, forcing climate change, and the many other factors critical to humankind. Hear Agency Earth Observation Leaders provide an integrated view of the challenges, successes, priorities and future plans for satellite oceanography.

Speakers:



Karen St. Germain

Director for Earth Science,
National Aeronautics and
Space Administration
(NASA),
United States



Toni Tolker-Nielsen

Acting Director of Earth
Observations Programs,
European Space
Agency (ESA),
Denmark



Takeshi Hirabayashi

Senior Chief Officer
of Earth Observation
Missions,
Japan Aerospace
Exploration Agency (JAXA),
Japan



Selma Cherchali

Head of Earth Science,
Centre National d'Etudes
Spatiales (CNES),
France

14:45 - 16:15 Designing a Geostationary Space Station for 22nd Century

Room: Sheikh Rashid B

Format: Design Sprint

Organizers/Moderators:



Matjaz Vidmar

Chairman and Policy Lead & Lecturer in Engineering Management, Gateway Earth Development Group, The University of Edinburgh, United Kingdom



Arun Venkataraman

Communications Lead & Founder, Gateway Earth Development Group & Invenk Solutions, India



Steve Earl

Futures Pathway Lead, Data and Design Lab, Edinburgh Futures Institute, The University of Edinburgh, United Kingdom

Geostationary Orbit is the focus of calls for making “big space” more sustainable. Hence, as part of this special session we will be exploring the new approaches for the development and management of geostationary orbit, with particular reference to on-orbit satellite up/re-cycling and manufacture, staging access to deep space, as well as opportunities in space tourism. This workshop will develop critical perspectives from multiple disciplines to frame a White Paper on a Geostationary Space Station.

Speakers:



Bernard Foing

Executive Director, International Lunar Exploration Working Group (ILEWG), EuroMoonMars, Chair IAF ITACCUS Committee, Netherlands



Derek Webber

Director, Spaceport Associates, United States



Miha Turšič

Waag Open Space Lab, WAAG, Netherlands



Edvard Kobal

President, Slovenian Science Foundation, Slovenia



Saskia Vermeylen

Reader in Law, University of Strathclyde, United Kingdom

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

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16:30 - 18:00 In-Space Servicing, Manufacturing, Assembly, Robotics, and Transportation (SMART)

Room: Sheikh Rashid B

Format: Workshop

Moderator:



Samantha Glassner

CEO,
RoboSAM Inc.,
United States

Please join our workshop on to learn more about the findings of a community think tank activity on the topic of in-space Servicing, Manufacturing, Assembly, Robotics, and Transportation (SMART). We will present the findings of the Space SMART Think Tank and salient features of how SMART applies to near-term applications in climate science and astrophysics followed by a discussion with the attendees about how SMART can be integrated into future missions.

Speakers:



Joseph Parrish

Program Manager,
DARPA,
United States



Harley Thronson

NASA Retired,
Retired from NASA GSFC,
United States



Gordon Roesler

CEO,
Robots In Space,
United States



John Grunsfeld

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

Thursday 28 October

09:45 - 11:15 Colliding Laws in Outer Space: Mapping Potential Clashes Between Space Law, Commerce, Antitrust and Ethics and their Solutions through Design Sprint

Room: Sheikh Rashid B

Format: Design Sprint

Organizers/Moderators:



Maria Lucas Rhimbassen

PhD Candidate in Space Law and Antitrust, University Toulouse 1 Capitole, France



Diane Howard

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



Lucien Rapp

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

“Interested in space antitrust and how it can become a tool to shape New Space sustainability and ethics? Come help us create a governance roadmap to ensure a smooth outer space ecosystem transition towards privatisation thanks to the innovative and entrepreneurial Design Sprint method! It is important to assess clashes between higher ethical principles of space law versus *lex mercatoria* and antitrust. We need to find a creative and interdisciplinary nexus together as a community.”

Speakers:



Lucy Stojak

Director, Mosaic Creativity and Innovation Hub, HEC Montreal, Canada



John D. Rummel

Senior Scientist, SETI Institute, United States,



Alexander MacDonald

Chief Economist, National Aeronautics and Space Administration (NASA), United States



Frans Von der Dunk

Harvey and Susan Perlman Alumni / Othmer Professor of Space Law Space, Cyber and Telecommunications Law LL.M. Program, University of Nebraska, United States



Marco Ferrazzani

Legal Counsel and Head of the Legal Services Department, European Space Agency (ESA), France



Steven Freeland

Emeritus Professor, Western Sydney University; Professorial Fellow, Bond University; Director, International Institute of Space Law, IISL, Australia

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

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11:30 - 13:00 Emirates Mars Mission Science Data Workshop

Room: Sheikh Rashid B

Format: Workshop

Emirates Mars Mission's (EMM) first set of data is scheduled for release beginning of October 2021. The EMM team would like to invite you to participate in 'EMM Science Data' workshop to learn about the three scientific instruments on board its Hope Probe, and their observations and datasets. The workshop targets interested individuals who plan to use EMM data; to provide understanding and confidence in accessing, navigating, and handling the datasets. The workshop will also provide an opportunity to address any questions the participant has directly to the EMM team.

Speakers:



Fatma Lootah
EMM Instrument Science Engineer – EMUS, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates



Khalid Badri
EMM Instrument Science Engineer - EMIRS, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates



Noora Al Mheiri
EMM Science Data Analyst – Lower Atmosphere, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates



Omran Al-Hammadi
EMM Science Data Center Lead, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

14:45 - 16:15 Democratizing Earth Analytics with AWS Cloud

Room: Sheikh Rashid B

Format: Workshop

The growing number of commercial satellite constellations for Earth Observation, together with the proliferation of cubesats, nanosats and even chipsats, have resulted in large amounts of geospatial data accessible and available to everyone. While industries of all kinds can benefit from geospatial insights - with applications that include infrastructure monitoring, precision agriculture, or carbon footprint tracking - the high cost of running and operating satellite ground segment and IT infrastructure remains an entry barrier that constraints widespread adoption. Over the years, AWS cloud services have accelerated innovation and, in this session, we will demonstrate how they can enable developers, data scientists and organizations to acquire, process and analyze satellite data cost-effectively and at scale.

Moderators/Speakers:



Ajit Rajdeosingh
Senior Solutions Architect, Aerospace & Satellite Solutions, Amazon Web Services, Luxembourg



Eloy Salcedo
Senior Solutions Architect, Aerospace & Satellite Solutions, Amazon Web Services, United Kingdom

16:30 - 18:00 Interstellar Probe: Humanity's First Deliberate Step into the Galaxy by 2030

Room: Sheikh Rashid B

Format: Campfire

Organizers:



Michael Paul
Interstellar Probe Study Project Manager,
The Johns Hopkins University Applied Physics Laboratory, United States



Pontus C. Brandt
Assistant Supervisor for Space Physics,
The Johns Hopkins University Applied Physics Laboratory, United States



Ralph McNutt
Interstellar Probe Concept Study Principal Investigator,
The Johns Hopkins University Applied Physics Laboratory, United States

“Join this discussion about the ambitious mission concept, Interstellar Probe! Hear directly from the study team and global thought leaders about:

- Launch plans for the fastest mission to escape from our solar system
- In situ investigations of the heliopause and interstellar space
- An unprecedented chance to see our solar system from the outside
- Opportunities for a close-up view of an outer-solar-system Dwarf Planet
- The Engineering opportunities, realities, and challenges”

Moderator:



Michael Paul
Interstellar Probe Concept Study Principal Investigator,
The Johns Hopkins University Applied Physics Laboratory, United States

Speakers:



Ralph McNutt
Interstellar Probe Concept Study Principal Investigator,
The Johns Hopkins University Applied Physics Laboratory, United States



Athena Coustenis
Director of Research Exceptional Class CNRS,
Centre National de la Recherche Scientifique (CNRS), France



Michel Blanc
Organizer of Planetary Exploration,
Horizon 2061; full member IAA, Institut de Recherche en Astrophysique et Planétologie (IRAP), France



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



Pontus C. Brandt
Director,
Institute of Experimental and Applied Physics, United States



Stanislav Barabash
Director,
Swedish Institute of Space Physics, Sweden



Nour Raouafi
Parker Solar Probe Project Scientist,
The Johns Hopkins University Applied Physics Laboratory, United States

11:30 - 12:30 Live Demonstration of Data Processing Using Artificial Intelligence and Satellite Data for Ocean Farming Applications

Room: Sheikh Rashid B

Format: Workshop

Organizer/Moderator:



Eva Fernandez Rodriguez

Project Manager and GNSS expert, AIOFAR, Spain

How can we increase the world's food security? Ocean farms can be the answer. However, they face several threats such as ocean acidification and harmful algal blooms, and they may even have a negative environmental impact if they are not carefully managed. In this live demonstration, we will show how to use artificial intelligence algorithms to combine Earth Observation and navigation information with in-situ data to protect and promote the sustainable development of ocean farming.

Speakers:



Eva Fernandez Rodriguez

Project Manager and GNSS expert, AIOFAR, Spain



Zachary Rowland

Hardware and Applications Engineer, AIOFAR, United Kingdom

12:45 - 13:45 Making Space for All: Advancing Disability Inclusion in Space for the Benefit of Science and All Humankind

Room: Sheikh Rashid B

Format: Campfire

Organizer/Moderator:



Anna Voelker

Executive Director, SciAccess, United States

From 3D-printed galaxies to sonified solar eruptions, learn about the latest innovations in accessible space science. This hands-on session will equip you to become a catalyst for change in your own communities. While networking with your fellow participants, you will explore everything from space policies for disabled astronauts to space education for blind students. This session will provide an exciting look at the future of disability inclusion in space and invite you to take part.

Speakers:



Anna Voelker

Executive Director, SciAccess, United States



Caitlin O'Brien

Student, The Ohio State University College of Engineering, United States

14:00 - 15:00 Use Cases for Intelligent Virtual Assistants in the Space Field

Room: Sheikh Rashid B

Format: Campfire

Organizer/Moderator:



Audrey Berquand

Research Fellow,
European Space
Agency (ESA),
Netherlands



Annalisa Riccardi

Lecturer,
University of Strathclyde,
United Kingdom

Today, your digital assistant can book your next hairdresser appointment, but tomorrow, could it help you design a Martian rover? Domain-specific virtual assistants, propelled by the recent advancements of Machine Learning, Speech and Text recognition and processing, can support humans in their daily work, facilitating information retrieval and providing expert reasoning. This panel will discuss various use cases for these smart assistants, focusing on the impacts this technology will have on your work environment.

Speakers:



Lorenzo Feruglio

CEO,
AIKO,
Italy



Tiago Nogueira

Chief Technology Officer,
VisionSpace Technologies,
Germany



Annalisa Riccardi

Chief Technology Officer,
University of Strathclyde,
United Kingdom



Antoni Virós i Martín

Graduate Research
Assistant,
Texas A&M University,
United States

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15:15 - 16:15 Regional Cooperation and National Space Legislation

Room: Sheikh Rashid B

Format: Workshop

Organizers/Moderators:



Ikuko Kuriyama
Advisor to the Director,
 International Relations
 and Research
 Department, Japan
 Aerospace Exploration
 Agency (JAXA),
 Japan



Koichi Kikuchi
*Associate Senior
 Administrator,*
 Legal and Compliance
 Division, General Affairs
 Department, Japan
 Aerospace Exploration
 Agency (JAXA),
 Japan



Yuri Ishizu
Administrator,
 Legal and Compliance
 Division, General Affairs
 Department, Japan
 Aerospace Exploration
 Agency (JAXA),
 Japan



Hiromichi Kojima
Assistant Administrator,
 International Relations
 Division, International
 Relations and Research
 Department, Japan
 Aerospace Exploration
 Agency (JAXA),
 Japan

“In this workshop, prominent speakers from various regions will introduce space law’s capacity building activities and discuss their significance and challenges. We are looking forward to the participation of those interested in capacity building and international cooperation in space law, especially those in emerging countries who are planning to formulate national space laws.”

Speakers:



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



Frans Von der Dunk
Professor of Space Law,
 College of Law University
 of Nebraska-Lincoln,
 United States



Tanja Masson-Zwaan
*Assistant Professor and
 Deputy Director of the
 International Institute of
 Air and Space Law (IIASL),*
 Leiden University,
 Netherlands



Yukiko Okumura
*Associate Space
 Law Officer,*
 United Nations Office
 for Outer Space
 Affairs (UNOOSA),
 Austria



Hamda Al Hosani
*Executive of Space
 Activities Licensing,*
 UAE Space Agency,
 United Arab Emirates



Yoshikazu Shoji
*Director, International
 Relations and Research
 Department,*
 Japan Aerospace
 Exploration Agency (JAXA),
 Japan

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 Lightning Talks

Date: Tuesday 26 October

Time: 12:50 – 13:20

Location: Pavilion B (Ground Floor)

Starting this year, the IAC will provide first-time, young researchers, students and professionals with the chance to show a lightning talk before the official Interactive Presentation Session. As part of the Technical Programme, the lightning talks will get a strong visibility and are a great opportunity to get to know the presenters at the IAC.

Lightning talks have a specific format and recommended structure, that make them stand out from other short talks. These talks are succinct, very dynamic and innovative, and must be delivered in under 60 seconds! Join us on Tuesday 26 October from 12:50 to 13:20, in Pavilion B (Ground Floor).

Moderator: Christophe Bonnal, Chair of the IP Award Committee

6.3 Interactive Presentations Award Ceremony & Session

Date: Thursday 28 October

Time: 12:45-13:15 (IP Award Ceremony), 13:15-14:45 (IP Session and Cocktail Reception)

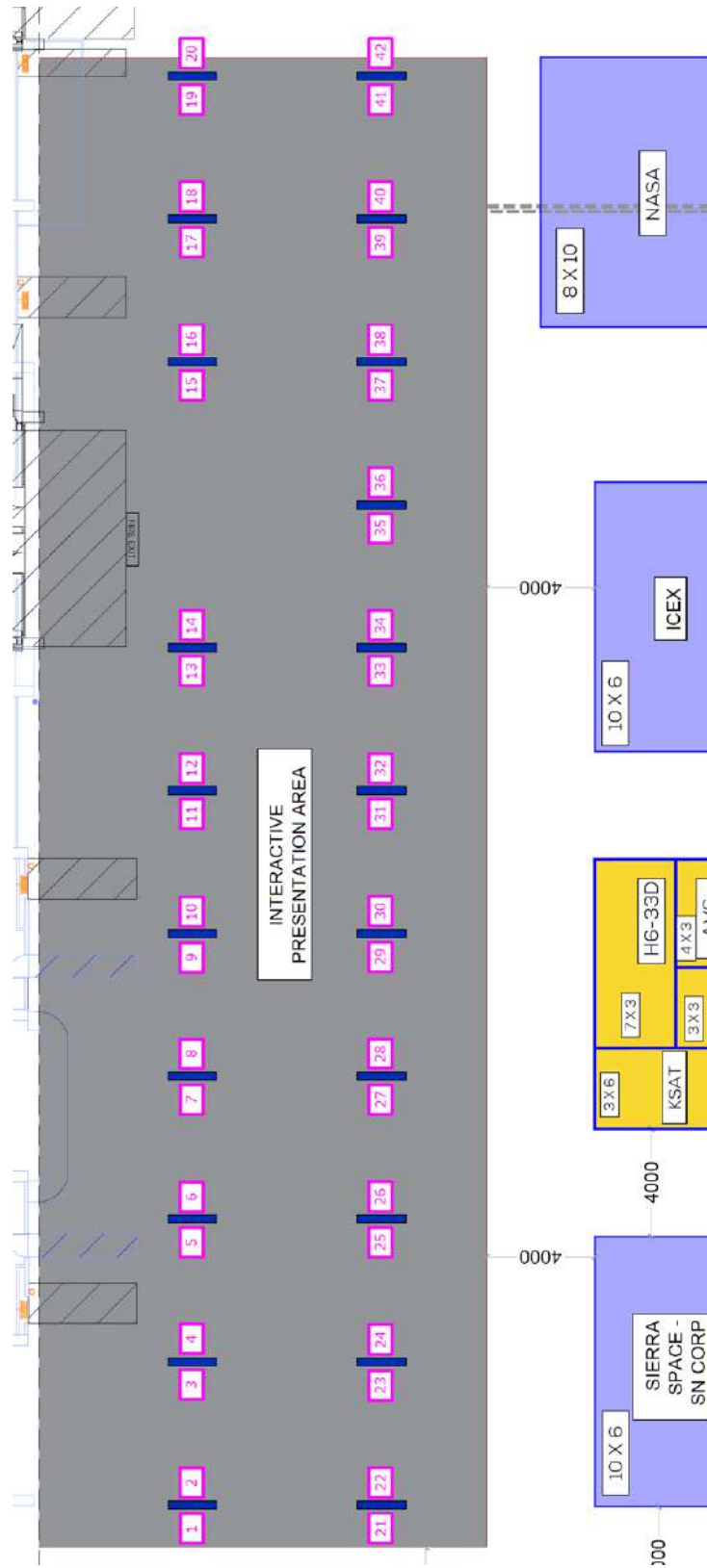
Location: IP Area (Exhibition, Ground Floor)



This presentation format helps foster presenters' creativity and skills, and provides a dynamic platform for building engaging, collaborative, and visually powerful presentations. Presenters will have a 10-minute presentation slot to highlight their work and discuss it with the audience. There will be countless opportunities to engage, gather inspiration, and encourage cooperation. The session will start with the traditional IP Award Ceremony at 12:45, during which the winners of the five best Interactive Presentations will be announced. This event will kick-off the IP Session and the IP cocktail reception, so do not miss your chance to mingle with the presenters and make sure to join us at the IP Area at 12:45!



6.4 Interactive Presentations Floor Plans



6.5 Interactive Presentations Schedule

Please check the IAF App to get the latest updates on the Interactive Presentations.

#SCREEN #1

13:15-13:25 IAC21/E5/64852
MEDICINE AND ARCHITECTURE IN SPACE HABITATION (M.A.S.H)
Tom Lobb, Aerospace Medic, United Kingdom

13:25-13:35 IAC21/E5/66794
THE GOLDEN HUMAN RECORD MKII
Adelia Drego, SAAB, Sweden

13:35-13:45 IAC21/E5/63983
THE CONCEPT OF ORTHOGONAL RING STRUCTURES IN THE ARCHITECTURE OF PROSPECTIVE MANNED SPACE STATIONS
Georgy Shcheglov, Bauman Moscow State Technical University, Russian Federation

13:45-13:55 IAC21/E5/62487
EARTH EXPLORATION FROM DATA SPACE : THE FIVE DIMENSIONS INCOMING
Jamel Metmati, THALES Services, France

13:55-14:05 IAC21/E5/63632
FROM A LITTLE DREAMER GIRL TO THE VAST COSMOS AND HUMANITY
Daniela Fernanda González Chávez, Universidad Nacional Autónoma de México (UNAM), Mexico

#SCREEN #3

13:15-13:25 IAC21/E1/66280
HALF A DECADE OF EXO-RO - THE NATIONAL ROVERS COMPETITION FOR HIGH-SCHOOLERS
Virgiliu Pop, Romanian Space Agency (ROSA), Romania

13:25-13:35 IAC21/E1/65387
THE SPACE NEWSLETTER: HOW DIGITAL PUBLISHING IN THE SPACE INDUSTRY AND ACADEMIA CAN SUPPORT CULTURE AND EDUCATION IN THE MEDITERRANEAN REGION
Antonia Russo, University Mediterranea of Reggio Calabria, Italy

13:35-13:45 IAC21/E1/66575
TELECOMMUTE TO THE MOON: A CASE STUDY IN MANAGING UNDERGRADUATE ENGINEERING PROJECTS WITHOUT ACCESS TO RESOURCES
Sam Bunka, University of British Columbia, Canada

13:45-13:55 IAC21/E1/61934
SPACE EDUCATION, SPACE RESEARCH AND SPACE INDUSTRY: CONNECTING A FRAGMENTED CHAIN
Bram De Winter, VU Amsterdam, The Netherlands

13:55-14:05 IAC21/E1/63956
THE INNOVATION CHALLENGE: A NEW APPROACH TO PAYLOAD DEVELOPMENT
Laura Champion, Lockheed Martin (Space Systems Company), United States

14:05-14:15 IAC21/E1/64168
INSPIRING GENERATIONS THROUGH EMIRATES MARS MISSION'S (EMM) SCIENCE OUTREACH PROGRAMS
Moza Al Sharif, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

#SCREEN #5

13:15-13:25 IAC21/D1/66849
AN L-CLASS MULTIROLE OBSERVATORY AND SCIENCE PLATFORM FOR NEPTUNE
James E. McKeivitt, University of Vienna, Austria

13:25-13:35 IAC21/D1/65875
DESIRA: A DECISION SUPPORT SYSTEM FOR INCORPORATING RISK ASSESSMENTS IN EARLY DESIGN STAGES
Raja Pandi Perumal, University of Luxembourg, Luxembourg

13:35-13:45 IAC21/D1/65209
PRELIMINARY ANALYSIS OF ACOUSTIC LOADS IN SMALL SPACECRAFT DESIGN
Giacomo Sparvieri, G.A.U.S.S. Srl, Italy

13:45-13:55 IAC21/D1/63188
EXTENDED REALITY INTEGRATED INTO TRADE SPACE EXPLORATION
Guglielmo Daddi, Politecnico di Torino, Italy

#SCREEN #7

13:15-13:25 IAC21/C3/65945
METAL-ORGANIC FRAMEWORK FOR STABLE CYCLABILITY OF LI-S BATTERIES FOR SPACE MISSIONS
Dominika Capková, Pavol Jozef Safarik University, Slovak Republic

13:25-13:35 IAC21/C3/65946
PIEZOELECTRIC CRYSTALS IN NOSE CONE & RE-ENTRY HEAT SHIELDS FOR GENERATION OF ELECTRICITY & THEIR THERMAL INSULATION
Heet Naik, University of Mumbai, India

13:35-13:45 IAC21/C3/62514
MULTI-JUNCTION SOLAR CELLS PERFORMANCE ANALYSIS AND DEGRADATION PREDICTIONS IN SPACE
Abdelkader Hadj Dida, Agence Spatiale Algérienne (ASAL), Algeria

13:45-13:55 IAC21/C4/65130
HYBRID PROPULSION SYSTEMS FOR RECONFIGURABLE SMALL SATELLITE CONSTELLATIONS
Chloe Gentgen, Massachusetts Institute of Technology (MIT), United States

13:55-14:05 IAC21/C4/66580
INVESTIGATION OF NUMERICAL MODELING METHODS FOR LIQUID FUEL COMBUSTION AND APPLICATIONS FOR SMALL-SCALE BIPROPELLANT LIQUID ROCKET ENGINES
Charmaine Neufeld, University of British Columbia, Canada

14:05-14:15 IAC21/C4/66385
STUDY OF MAGNETO-PLASMA DYNAMIC THRUSTER SYSTEM
Paras Adlakha, University of Petroleum and Energy Studies, India

14:15-14:25 IAC21/C4/65063
ELECTROMAGNETIC ROCKET LAUNCH SYSTEM
Heet Naik, University of Mumbai, India

#SCREEN #9

13:15-13:25 IAC21/B4/63368
INTERNATIONAL COOPERATION FOR THE DEVELOPMENT OF HUMAN CAPITAL IN STUDENTS IN DEVELOPING COUNTRIES IN THE AEROSPACE SECTOR:
Axel Núñez Arzola, Facultad de Ingeniería-UNAM, Mexico

13:25-13:35 IAC21/B4/64615
MISSION AND SYSTEM DESIGN FOR 80KG-CLASS X-BAND ACTIVE SAR SATELLITE OF S-STEP
Hong-Ju Lee, Hanwha Thales, Republic of Korea

13:35-13:45 IAC21/B4/66243
TAKING A SELFIE IN SPACE: AN OVERVIEW ON A SPACE SELFIE STICK FOR SMALLSATS AND NANOSATS
Thomas Sinn, Deployables Cubed GmbH, Germany

13:45-13:55 IAC21/B4/66598
DEVELOPMENT AND PERFORMANCE MEASUREMENT OF FERROFLUID BASED ATTITUDE CONTROL ACTUATORS
Felix Schäfer, Institute of Space Systems, Universität Stuttgart, Germany

13:55-14:05 IAC21/B4/66886
MONITORING FOREST FIRE AND VOLCANIC ERUPTIONS USING SATELLITE CONSTELLATION
Monish Mathur, Technische Universität Berlin, Germany

14:05-14:15 IAC21/B4/66941
MISC-3 A COLOMBIAN CUBESAT 3U FOR EARTH OBSERVING APPLICATIONS
Julian Rodriguez-Ferreira, Universidad Industrial de Santander, Colombia

#SCREEN #11

13:15-13:25 IAC21/B2/61802
DESIGN AND ANALYSIS OF SURFACE COMMUNICATION SYSTEM FOR THE EMIRATES LUNAR MISSION
Sara AlMaeni, United Arab Emirates

13:25-13:35 IAC21/B2/64542
A MOBILE COST-EFFECTIVE SATELLITE GROUND STATION TO RECEIVE WEATHER IMAGES IN REMOTE COMMUNITIES
Alex Jurgutis, Faculty of Engineering, Carleton University, Canada

13:35-13:45 IAC21/B2/67040
IMPROVED DEEP SPACE COMMUNICATION FOR INTERPLANETARY MISSIONS USING SATELLITE NETWORKS IN SUN-SYNCHRONOUS POLAR ORBIT.
Saurabh Gore, Moscow Aviation Institute (National Research University), Russian Federation

13:45-13:55 IAC21/B2/65231
DESIGN APPROACH TO QUANTIFY INTER-GROUND STATION DISTANCES BY DOPPLER BASED RANGING EXPERIMENT FOR SMALL SATELLITE MISSIONS
Aditya Savio Paul, University of Tartu, Estonia

13:55-14:05 IAC21/B2/66166
A METHOD OF FAULT DIAGNOSIS WITH MIXED INDEX BASED ON PROBABILITY STATISTICS ANALYSIS
Ruobing Tian, Beijing Institute of technology, China

#SCREEN #13

13:15-13:25 IAC21/B1/62810
SUPER RESOLUTION OF HYPERSPECTRAL SATELLITE IMAGERY USING 1D, 2D, AND 3D CONVOLUTION
Nour Aburaed, University of Dubai, United Arab Emirates

13:25-13:35 IAC21/B1/64370
MISSION ANALYSIS AND TRADE-OFF STUDY FOR AURORAL OVAL OBSERVATION MISSION UTILIZING CUBESATS FOR SPACE WEATHER MONITORING
Lisa Drudi, European Space Agency (ESA-ESOC), Canada

13:35-13:45 IAC21/B1/65386
DEVELOPMENT OF A COMPLETE TOOLBOX FOR VALIDATION ACTIVITIES OF DMSAT-1 USING PYTHON AND PYQT
Haritha Harikrishnan, University of Dubai, United Arab Emirates

13:45-13:55 IAC21/B1/66569
EARTH OBSERVATION FOR ARCTIC OCEAN PLASTIC DEBRIS
Finnegan Sougioultzoglou, International Space University (ISU), France

13:55-14:05 IAC21/B1/64530
EFFECTS OF AFRICAN DUST EVENTS ON SEA SURFACE TEMPERATURE PATTERNS IN PUERTO RICO USING EARTH OBSERVATION DATA AND GROUND BASE STATIONS
Edgar Perez-Matias, University of Puerto Rico, Puerto Rico

14:05-14:15 IAC21/B1/66190
WIDE SWATH LENS OPTICAL PAYLOAD BASED ON A MODIFIED PETZVAL SYSTEM
Vladislav Nahorniy, Dragonfly Aerospace, Ukraine

#SCREEN #16

13:15-13:25 IAC21/A3/63249
DESIGN OF A MARS EXPLORATION MICROROVER CONCEPT FOR FUTURE MISSIONS WITH MODULARITY AND RECONFIGURABILITY CHARACTERISTICS
Efstathios Rigas, University of Patras, Greece

13:25-13:35 IAC21/A3/63621
A PROGRAMMED ELECTROMAGNET-SPRING BASED CUBESAT LAUNCH SYSTEM ON LUNAR SURFACE
Ananya Kodukula, Ramaiah Institute of Technology, India

13:35-13:45 IAC21/A3/63680
EMIRATES MARS MISSION 2020: EMIRATES EXPLORATION IMAGER (EXI) OVERVIEW
Mariam AlShamsi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

13:45-13:55 IAC21/A3/64739
CONCEPT FOR A HELIOSTAT ON-BOARD A ROVER TO ENABLE EXTENDED SURFACE OPERATIONS IN SHADOWY AREAS ON THE MOON
Sebastian Els, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

13:55-14:05 IAC21/A3/65547
EUROMOONMARS-POLAND ANALOG ASTRONAUT CAMPAIGNS OF 2021
Kevin McGrath, ILEWG EuroMoonMars, Ireland

14:05-14:15 IAC21/A3/67048
THE EFFECTS OF PHYSICAL TRAINING AND MEDITATION ON HUMAN BEHAVIOUR AND BASIC PHYSIOLOGICAL NEEDS FOR FUTURE HUMAN SPACE FLIGHT MISSIONS
Farnoosh Sheini Dashtgol, International MoonBase Alliance, United States

14:15-14:25 IAC21/A3/67032
AUTOMATED DESIGN OF ROBOTS FOR EXPLORING EXTREME ENVIRONMENTS OF MARS FOLLOWING AN ANIMAL SURVIVALIST APPROACH
Jekanthan Thangavelautham, University of Arizona, United States

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#SCREEN #18

13:15-13:25 IAC21/A3/63912
EMIRATES MARS MISSION 2020: EMIRATES MARS ULTRAVIOLET SPECTROMETER (EMUS) OVERVIEW
Fatma Lootah, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

13:25-13:35 IAC21/A3/61801
EFFICIENT LUNAR-EARTH COMMUNICATION SYSTEM BASED ON SOFTWARE DEFINED RADIO FOR THE EMIRATES LUNAR MISSION
Sara AlMaeni, United Arab Emirates

13:35-13:45 IAC21/A3/64721
MANUFACTURING AND CHARACTERIZATION OF LUNAR REGOLITH SIMULANTS
Kemal Celik, New York University Abu Dhabi, United Arab Emirates

13:45-13:55 IAC21/A3/64672
MICROWAVE POWERED EXTRACTION OF WATER ICE FROM THE PERMANENTLY SHADOWED REGIONS ON THE LUNAR SURFACE
Kunal Kulkarni, Space Generation Advisory Council (SGAC), India

13:55-14:05 IAC21/A3/64563
PROJECT DREXCIYA: A PROPOSAL FOR A SPACECRAFT TO ASSESS MINING TECHNIQUES AT A NEAR EARTH ASTEROID
Andre Nowaczek, Asteroid Mining Corporation Ltd UK, United Kingdom

14:05-14:15 IAC21/A3/64448
MOON EXPLORATION BY OUTER THE POINT : THE FUTURE OF THE ROBOTIC SCIENCE
Jamel Metmati, THALES Services, France

14:15-14:25 IAC21/A3/64256
THE BRIGHT SIDE OF THE MOON: MULTI-CONSTRAINED OPTIMIZED MAPS IN SUPPORT OF FUTURE MISSION PLANNING
Jacopo Capolicchio, Thales Alenia Space, Italy

#SCREEN #20

13:15-13:25 IAC21/A2/65382
COLOR BLINDNESS IN SPACE
Francisco Cuéllar, Iceland

13:25-13:35 IAC21/A5/65580
CHLORIDES FOR IN-SITU RESOURCE UTILIZATION ON MARS
Elise Harrington, University of Oslo, Norway

13:35-13:45 IAC21/A5/65520
DESIGN AND ANALYSIS OF SPACE TRANSPORTATION SYSTEMS FOR ASTEROID RESOURCE UTILIZATION : A BASE FOR DEVELOPMENT OF FUTURE MARS HABITATS
Smriti Srivastava, Space Generation Advisory Council (SGAC), India

#SCREEN #22

13:15-13:25 IAC21/E7/63773
HALF A CENTURY IN SPACE: CONTRIBUTING TO THE DEVELOPMENT OF SPACE AND TELECOMMUNICATIONS LAW
Elina Morozova, Intersputnik International Organization of Space Communications, Russian Federation

13:25-13:35 IAC21/E7/61862
INTERNATIONAL LEGAL ASPECTS ON THE EXPLORATION AND USE OF SOLAR ENERGY IN OUTER SPACE
Irina Chernykh, Peoples' Friendship University of Russia (RUDN University), Russian Federation

#SCREEN #24

13:15-13:25 IAC21/E3/66810
THE CASE FOR MARTIAN INDEPENDENCE
Katarzyna Malinowska, Kozminski University, Poland

13:25-13:35 IAC21/E9/64614
MITIGATING SPACE DEBRIS THROUGH RISK ASSESSMENT FRAMEWORKS
Anne Jing, University of Toronto Aerospace Team (UTAT), Canada

13:35-13:45 IAC21/E9/63533
ACTIVE DEBRIS REMOVAL & POLICY AND LEGAL FEASIBILITY
Josef Koller, The Aerospace Corporation, United States

#SCREEN #26

13:15-13:25 IAC21/D3/67031
ADVANCING ASTEROID SURFACE SIMULATIONS AND MISSIONS USING AN ON-ORBIT CENTRIFUGE LABORATORY WITHOUT REACTION WHEELS
Jekanthan Thangavelautham, University of Arizona, United States

13:25-13:35 IAC21/D3/65706
EMERGING-SPACE COUNTRIES AND THE FUTURE OF SPACE EXPLORATION
Ghanim Alotaibi, Kuwait

13:35-13:45 IAC21/D3/64597
UNIVERSAL BERTHING MECHANISM
Szymon Matkowski, Nexus Aurora, Poland

13:45-13:55 IAC21/D3/62531
APPLICATIONS FOR ARTIFICIAL INTELLIGENCE IN NEXT GENERATION DEEP SPACE EXPLORATION ROBOTICS
Rohaam Ahmed, MDA SPACE INC., Canada

13:55-14:05 IAC21/D4/61996
BIG INHABITABLE BASES AND DEEP MINES ON THE SURFACE OF VENUS.
Oleg Aleksandrov, Private individual www.oleg.space, United States

#SCREEN #28

13:15-13:25 IAC21/C1/66577
A NOVEL APPROACH FOR DYNAMICS MODELLING, ANALYSIS AND SIMULATION OF BOOM MOUNTED REFLECTOR DEPLOYMENT PROCESS FOR SWEEPSAR IMAGING SATELLITES
Ashok Kumar K, U R Rao Satellite Centre (URSC), India

13:25-13:35 IAC21/C1/64821
A REVIEW ON TRAJECTORY DESIGNS OF POTENTIAL ASTEROID MINING TARGETS
Mahima Soota, Amity Institute of Space Science and Technology (AISST), India

13:35-13:45 IAC21/C1/66671
FLEXIBLE RECONFIGURATION FOR FORMATION FLYING SPACECRAFT WITH FUEL BALANCING
Karthick Dharmarajan, University of Rome "La Sapienza", Italy

13:45-13:55 IAC21/C2/64773
DESIGN AND PROTOTYPING OF NOVEL ANTENNA DEPLOYMENT SYSTEM FOR CUBESATS
Rohan Malik, Birla Institute of Technology and Science (BITS), India

13:55-14:05 IAC21/C2/63422
A MECHANICS-BASED DERIVATION OF THE SHELL-LIKE BUCKLING LOAD OF ISOTRUSS STRUCTURES SUBJECT TO UNIAXIAL COMPRESSION
Hanna Opdahl, Brigham Young University, United States

14:05-14:15 IAC21/C2/63886
ELECTRONICS BOX DESIGN OPTIMIZATION OF LUNAR MICRO ROVERS
Sarath P Mohan, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

14:15-14:25 IAC21/C2/63245
MULTIDIMENSIONAL ANALYSIS OF LUNAR SOIL AND LUNAR SOIL SIMULANTS
Alejandro Tenorio, Universidad de Costa Rica, Costa Rica

14:25-14:35 IAC21/C2/62854
STUDIES ON DEVELOPMENT OF NEW COATING MATERIAL FOR SPACE APPLICATIONS.
Rutvik Pandit, Sapienza University of Rome, Italy

14:35-14:45 IAC21/C2/64784
THERMAL SYSTEM MODEL AND DESIGN OF THE CONTROL OF A 3U CUBESAT
Mridul Saxena, Birla Institute of Technology and Science (BITS), India

#SCREEN #30

13:15-13:25 IAC21/B4/66948
HUGIN: AN INNOVATIVE SMALL SPACECRAFT MISSION FOR DEEP-SPACE EXPLORATION TECHNOLOGY DEMONSTRATION
Ioana-Simona Rosca, Luleå University of Technology, Sweden

13:25-13:35 IAC21/B4/66551
TECHNOLOGIES AND FACILITIES FOR THE AIV/AIT PHASE OF NANOSATELLITE ADCS SUBSYSTEMS: HERMES AS AN APPLICATIVE CASE
Andrea Colagrossi, Politecnico di Milano, Italy

13:35-13:45 IAC21/B4/64383
CUBESAT INTERFACE STANDARDIZATION TO ACHIEVE FASTER DELIVERY, MISSION SUCCESS AND MASS PRODUCTION
Mengu Cho, Kyushu Institute of Technology, Japan

13:45-13:55 IAC21/B4/61713
3D MODEL OF A PLANET'S ATMOSPHERE USING A MEGA CLUSTER OF 10-GRAM CHIPSATS.
Uri Greisman Ran, Israel

13:55-14:05 IAC21/B4/65912
OPERATIONAL RESULTS OF A GNSS PAYLOAD FOR PRECISE POSITION AND ORBIT DETERMINATION OF BEESAT-9
Sascha Weiss, TU Berlin, Germany

14:05-14:15 IAC21/B4/65534
BATTERY TEMPERATURE BEHAVIOR IN CUBESATS AT LOW EARTH ORBIT: FROM TELEMETRY TO GROUND TESTING
Vaclav Knap, GomSpace Aps, Denmark

#SCREEN #32

13:15-13:25 IAC21/B3/65919
INTUITIVE ASTRONAUT MANEUVERING UNIT FOR EXTRA VEHICULAR MISSIONS
Chesler Thomas, Space Generation Advisory Council (SGAC), India

13:25-13:35 IAC21/B3/62024
COMMERCIAL MANNED MISSION TO THE SURFACE OF VENUS.
Oleg Aleksandrov, Private individual www.oleg.space, United States

13:35-13:45 IAC21/B3/61989
COMMERCIAL PILOTED EXPEDITION TO MARS, PHOBOS AND DEIMOS.
Oleg Aleksandrov, Private individual www.oleg.space, United States

13:45-13:55 IAC21/B6/66365
PYTHON IMPLEMENTATION OF CCSDS FILE DELIVERY PROTOCOL TO SUPPORT FILE-BASED OPERATIONS
Artur Scholz [unlisted], Germany

13:55-14:05 IAC21/B6/66524
AN OPENSOURCE METHOD FOR FAST PRELIMINARY IDENTIFICATION AND ORBIT-DETERMINATION OF INDIVIDUAL (CUBE/SMALL) SATELLITES IN SUPER-CLUSTERS DEPLOYED FROM RIDESHARE LAUNCHES
Andreas Hornig, University of Stuttgart, Germany

14:05-14:15 IAC21/B6/63656
SOFT TRANSLATABLE ADVANCED ROBOT FOR IN-SPACE HANDLING (STARFISH)
Christian Blair, University of Southern California, United States

#SCREEN #34

13:15-13:25 IAC21/A6/64861
CONSTRAINED OPTIMAL COLLISION AVOIDANCE MANOEUVRE ALLOCATION UNDER UNCERTAINTY FOR SUBSEQUENT CONJUNCTION EVENTS
Luis Sanchez, University of Strathclyde, United Kingdom

13:25-13:35 IAC21/A6/64936
OPTIMISATION OF DEBRIS INTERCEPT MANOEUVRES TO ENABLE ACTIVE REMOVAL MISSIONS
Timothy Peterson, United Kingdom

13:35-13:45 IAC21/A6/66620
DESIGN AND ANALYSIS OF NOVEL MECHANICAL DOCKING PORT FOR NON-COOPERATIVE DOCKING AND LIFE EXTENSION OF SMALL SATELLITES.
Amit Chowdhary, SRM University, Kattankulathur, Chennai, India

13:45-13:55 IAC21/A6/66306
CONCEPTUAL DESIGN AND FLIGHT SIMULATION OF SMALL SATELLITE PAYLOAD RECOVERY SYSTEM USING AN AUTONOMOUS GUIDED PARAFOL BASED ON COTS
Niki Sajjad, K. N. Toosi University of Technology, Iran

13:55-14:05 IAC21/A6/66198
ANALYSIS OF POSSIBLE DEFINITIONS OF THE SPACE ENVIRONMENT CAPACITY TO PURSUE LONG-TERM SUSTAINABILITY OF SPACE ACTIVITIES
Valeria Trozzi, Politecnico di Milano, Italy

#SCREEN #36

13:15-13:25 IAC21/A3/65091
RANDOM VIBRATION AND STRESS ANALYSIS OF THE 3D-PRINTED MINIATURIZED HIGH-RESOLUTION MULTIPLE ELECTRODES HARMONIZED KINGDON TRAP
Anastasiia Fursova, Skolkovo Institute of Science and Technology, Russian Federation

13:25-13:35 IAC21/A3/65229
TOWARDS ENDOGENOUS MAPPING OF SMALL SOLAR SYSTEM BODIES DURING MULTI-AGENT RENDEZVOUS
Aditya Savio Paul, University of Tartu, Estonia

13:35-13:45 IAC21/A3/65239
SPACE MISSIONS TO INTERSTELLAR OBJECTS: BUILD-AND-WAIT MISSIONS
Laia Lopez Llobet, International Space University (ISU), France

13:45-13:55 IAC21/A3/65346
CANDIDATE LANDING SITES AT THE SOUTH POLE OF THE MOON FOR THE LSAS COMMERCIAL LANDER MISSION
Marine Joulaud, Centre de Recherches Pétrographiques et Géochimiques (CRPG), France

13:55-14:05 IAC21/A3/65494
LUNAR HIGRES-NET: SUPER RESOLUTION FOR LUNAR SURFACE IMAGERY
Jose Ignacio Delgado Centeno, University of Luxembourg, Luxembourg

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14:05-14:15 IAC21/A3/65516
IDENTIFYING MARTIAN FELDSPATHIC ROCKS WITH VISIBLE NEAR-
INFRARED SPECTROSCOPY
*Marie Barthez, Centre de Recherches Pétrographiques et
Géochimiques (CRPG), France*

14:15-14:25 IAC21/A3/67148
EMIRATES MARS MISSION: EMIRATES MARS INFRARED
SPECTROMETER (EMIRS) OVERVIEW
*Khalid Badri, Mohammed Bin Rashid Space Centre (MBRSC),
United Arab Emirates*

14:25-14:35 IAC21/A3/67162
ADDITIVE MANUFACTURING OF COMPLEX SHAPE CERAMIC
PARTS FROM LUNAR REGOLITH SIMULANT
*Maxim Isachenkov, Skolkovo Institute of Science and Technology,
Russian Federation*

#SCREEN #37

13:15-13:25 IAC21/A3/66990
USING MAGNETOMETRY FOR THE EXPLORATION AND MAPPING
OF LAVA TUBES ON MAUNA LOA FOR LUNAR AND MARTIAN
ANALOGUES
Marc Heemskerck, Vrije Universiteit Amsterdam, The Netherlands

13:25-13:35 IAC21/A3/66789
EGYPT'S PARTICIPATION IN THE MVA PESC PROJECT: A REVIEW
OF THE GAPS AND OPPORTUNITIES IN PAST AND FUTURE LUNAR
MISSIONS
Hoda Elmegharbel, Kyushu Institute of Technology, Japan

13:35-13:45 IAC21/A3/66536
LOOPS-M PROJECT: STRUCTURAL AND BIOGENERATIVE
SYSTEMS FOR A SUSTAINABLE LUNAR GREENHOUSE
Riccardo Restivo Alessi, Sapienza University of Rome, Italy

13:45-13:55 IAC21/A3/66265
TERRAIN CHARACTERISTICS AND SELECTION OF THE EMIRATES
LUNAR MISSION LANDING SITE
Sylvain Breton, Université de Lorraine, France

13:55-14:05 IAC21/A3/66112
LUNAR CAVE EXPLORATION USING AUTONOMOUS ROVER
SAMPLE COLLECTION & ANALYSIS
Rutuja Pilgar, National Space Society, India

14:05-14:15 IAC21/A3/66095
LUNAR MINING AND MAPPING USING MULTIPURPOSE
AUTONOMOUS ROVER
Prathmesh Barapatre, National Space Society, India

14:15-14:25 IAC21/A3/66024
PROPOSED HUMAN-ASSISTED ROBOTIC TRAVERSES IN THE
NORTHWEST PEAK RING OF THE SCHRÖDINGER BASIN.
Elise Harrington, University of Oslo, Norway

14:25-14:35 IAC21/A3/64748
ANALYSIS OF PHYSICAL PHENOMENA ASSOCIATED WITH
ASTEROIDS DEFLECTED BY KINETIC IMPACT
Bruno Chagas, UNESP - São Paulo State University, Brazil

13:15-13:25 IAC21/A3/64201
POTENTIAL OF THERMAL IMAGING INSTRUMENTS IN FUTURE
ROVER AND LANDER MISSIONS
*Gen Ito, Centre de Recherches Pétrographiques et Géochimiques
(CRPG), France*

13:25-13:35 IAC21/A3/64128
PREPARING FOR ARTEMIS AND MOON OUTPOST EXPERIMENTS:
TU DUBLIN PROJECTS AT ILEWG EUROMOONMARS 2021 TEAM
Kevin McGrath, ILEWG EuroMoonMars, Ireland

13:35-13:45 IAC21/A3/64735
MAD: AN EXPERIMENT FOR MATERIAL ADHESIVENESS
DETERMINATION ON-BOARD THE EMIRATES LUNAR MISSION'S
RASHID ROVER
*Sebastian Els, Mohammed Bin Rashid Space Centre (MBRSC),
United Arab Emirates*

13:45-13:55 IAC21/A3/63222
TRAJECTORIES WITH MULTIPLE ATMOSPHERE RE-ENTRIES
AND ANISOTROPIC HEAT-SHIELDING MATERIALS: ANALYSIS OF
IMPACT ON THE TEMPERATURE REDUCTION ON THE SURFACE OF
A RE-ENTRY MODULE
*Victor Leonov, Bauman Moscow State Technical University, Russian
Federation*

13:55-14:05 IAC21/A3/62585
DEVELOPMENT AND PROPERTIES INVESTIGATION OF TLS-01: THE
FIRST THAILAND LUNAR REGOLITH SIMULANT
*Saran Seehanam, King Mongkut's University of Technology Thonburi,
Thailand*

14:05-14:15 IAC21/A3/63060
MOON LIVING FERMENTERS: AN IN-SITU RESOURCE UTILIZATION
TECHNOLOGY DEMONSTRATOR
Álvaro Tomás Soria Salinas, HE Space Operations, Germany

14:15-14:25 IAC21/A3/64093
EXPLORING THE MOON - THE KEY IMPORTANCE OF LUNAR
LOGISTICS FOR SETTING UP A SUSTAINABLE LUNAR ECOSYSTEM.
Thomas Schrage, Airbus Defence and Space, Germany

13:15-13:25 IAC21/A1/66045
INTERNATIONAL COOPERATION IN THE IMPLEMENTATION
OF SCIENTIFIC MEDICAL AND BIOLOGICAL RESEARCH AND
EXPERIMENTS ON THE ISS
*Anna Kussmaul, Institute of Biomedical Problems (IBMP), Russian
Academy of Sciences (RAS), Russian Federation*

13:25-13:35 IAC21/A1/65185
CONCEPTUAL DESIGN OF MARTIAN HABITAT AND LIFE SUPPORT
SYSTEM USING IN-SITU RESOURCES
Anand Nagesh, India

13:35-13:45 IAC21/A1/63276
RESEARCH OF MONITORING THE USE OF GARMENT,
UNDERWEAR AND PERSONAL HYGIENE MEANS IN 17-DAY AND
120-DAY ISOLATION CONDITIONS OF THE SIRIUS PROJECT
*Irina Shumilina, Institute of Biomedical Problems (IBMP), Russian
Academy of Sciences (RAS), Russian Federation*

13:45-13:55 IAC21/A1/64605
OXYGEN AND ENERGY FOR INTERPLANETARY TRAVELS
*Miguel Angel Arellano Serrano, Universidad Panamericana de Ciudad
de México, Mexico*

13:55-14:05 IAC21/A1/64775
BACTERIAL POSSIBILITIES FOR SUSTAINABILITY ON
MARS – IN-SITU RESOURCE UTILIZATION WITH
MICROORGANISMS
Diana Pawlicki, University of Lodz, Poland

14:05-14:15 IAC21/A1/64900
IMPROVED LEAK-PROOF HELMET FOR SPACE EXPLORERS
Chelsea Bahenduzi, Concordia University, Canada

14:15-14:25 IAC21/A1/66531
THE SIGNIFICANCE OF ELECTROMAGNETIC FIELDS FOR HUMAN
SPACE EXPLORATION
Kolemann Lutz, Mars University, United States

14:25-14:35 IAC21/A1/66561
THE UNSOLVED CHALLENGES OF SPACE BIOSPHERES: A
RESEARCH AGENDA
*Floriana Scarpisi, Space Exploration Project group, Space Generation
Advisory Council (SGAC), The Netherlands*

14:35-14:45 IAC21/A1/66709
BIOSYSTEMS TO FEED ON MARS: CONSIDERATIONS ABOUT HIGH-
PERFORMANCE SYSTEMS FOR OPTIMAL SPACE GREENHOUSE
OPERATION
*Davi Alves Feitosa Souza, Federal University of Rio Grande do Norte
(UFRN), Brazil*

Virtual

IAC21/A1/65412

PSYCHOLOGICAL FACTORS ASSOCIATED WITH HABITAT DESIGN FOR SPACE ANALOG MISSIONS
Ravneet Kaur, TU Berlin, Germany

IAC21/A1/65003

DESIGN OF PERFORMGLOVE FOR QUANTIFYING PERFORMANCE OF SCIENTIFIC FIELDWORK TASKS WHEN WEARING A MARS EXTRAVEHICULAR MOBILITY UNIT (MEMU) GLOVE
Nina Purvis, King's College London, United Kingdom

IAC21/A3/64698

DESIGN AND FABRICATION OF A LUNAR SOFT ROBOT WITH CRAWLING AND JUMPING LOCOMOTION MODES
Yufei Guo, Northwestern Polytechnical University; National Key Laboratory of Aerospace Flight Dynamics, China

IAC21/A3/64425

MOTION PLANNING STRATEGY OF FREE-FLOATING SPACE ROBOT BASED ON DEEP REINFORCEMENT LEARNING TO CAPTURE NON-COOPERATIVE TARGET
Yinong Ouyang, College of Astronautics, Northwestern Polytechnical University, China

IAC21/A3/63145

PLANETARY LANDER FOR YIELDING EXPLORATION AND RANGING (PLAYER) - CONCEPT FOR A REUSABLE LUNAR LANDER FOR SHUTTLING PAYLOADS WITHIN CIS-LUNAR SPACE
Neelesh Ranjan Saxena, TU Berlin, Germany

IAC21/A3/64066

A NON-GPU INSTANCE LEVEL SEMANTIC ACQUISITION METHOD FOR COMPUTING RESOURCES LIMITED SCENARIOS
Qianlong Li, National Key Laboratory of Aerospace Flight Dynamics, Northwestern Polytechnical University, Xi'an, China

IAC21/A6/63400

ORBITAL FLIPS DUE TO SOLAR RADIATION PRESSURE FOR ORBITAL DEBRIS IN MEO AND GSO
Eduard Kuznetsov, Ural Federal University, Russian Federation

IAC21/A6/63479

GROUND TEST OF VISUAL SERVOING FOR HIGH SPEED TUMBLING SPACE DEBRIS CAPTURE AND LESSONS LEARNED
Jing Yuan, National Key Laboratory of Aerospace Flight Dynamic, Northwestern Polytechnical University, China

IAC21/A6/64049

COLLISION STUDY OF SPACE DEBRIS CAPTURE BY SERVICE SPACECRAFT WITH ROBOTIC ARMS CONNECTED BY FLEXIBLE JOINTS
Ze Zhu, National Key Laboratory of Aerospace Flight Dynamic, Northwestern Polytechnical University, China

IAC21/A6/65035

SMALL SPACECRAFT RECOGNITION USING RECURRENT NEURAL NETWORKS
Zhong Ma, Xi'an Microelectronics Technology Institute, China

IAC21/A6/66634

ION SCV AS A SPACE SURVEILLANCE AND TRACKING INFRASTRUCTURE
Chris Brunskill, United Kingdom

IAC21/A6/65638

HARDWARE IMPLEMENTATION OF THE SPOT PAYLOAD FOR ORBITING OBJECTS DETECTION USING STAR SENSORS
Mohamed Salim Farissi, Sapienza University of Rome, Italy

IAC21/A6/66108

DESIGN OF AN OPTICAL SPACE-BASED INSTRUMENT FOR A SPACE DEBRIS MONITORING MISSION
Sergio Parra, Graz University of Technology (TU Graz), The Netherlands

IAC21/B4/63447

CHINA'S COMMERCIAL SPACE PROGRESS
Lianxiang Jiang, China Academy of Space Technology (CAST), China

IAC21/B6/66143

CONSTELLATIONS MONITORING WITH CASTEC
Chiara Brighenti, S.A.T.E., Italy

IAC21/B6/66183

SOFTWARE DEVELOPMENT OF LAPAN-A2 AND LAPAN-A3 SATELLITE OPERATORS SCHEDULING
Annisa Sarah, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

IAC21/B6/66152

EFFECT OF FORCED CONVECTION BY BOILING BUBBLE ON POOL BOILING HEAT TRANSFER COEFFICIENT OF LIQUID NITROGEN FOR BUNDLE-TUBE HEAT EXCHANGER FOR COOLING OXIDIZER IN LAUNCH GROUND SYSTEM
Mansu Seo, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC21/B6/64495

DEMAND ANALYSIS OF SPACE-BASED SATELLITE PLATFORMS USING NEW TYPE ELECTRO-OPTICAL COUNTERMEASURES WEAPONS
Xiao Liu, Shanghai Aerospace Control Technology Institute (SACTI), China

IAC21/C1/64619

AN ON-ORBIT CALIBRATION METHOD OF LOAD AND TRACKING EQUIPMENT FOR SPACE-BASED SATELLITE PLATFORM
Xiao Liu, Shanghai Aerospace Control Technology Institute (SACTI), China

IAC21/C1/62167

TIME-SYNCHRONIZED ATTITUDE TRACKING DURING RENDEZVOUS AND DOCKING MANEUVERS
Dongyu Li, National University of Singapore, Singapore, Republic of

IAC21/C1/65600

REINFORCEMENT LEARNING ATTITUDE CONTROLLER DESIGN BASED ON PID CONTROL FOR VARIABLE CONFIGURATION
Wang Ran, Institute of Telecommunication Satellite, China Academy of Space Technology, China

IAC21/C3/65677

HIGH-TEMPERATURE PHOTOVOLTAIC CELLS FOR NEAR-SUN AND INTERSTELLAR PRECURSOR MISSIONS: STATE OF THE ART AND FUTURE DEVELOPMENTS
Corentin Guémené, International Space University (ISU), France

IAC21/C4/64507

RESEARCH ON THE SUPPRESSION METHODS OF HIGH FREQUENCY PRESSURE PULSATION IN COMBUSTION CHAMBER FOR LIQUID ROCKET ENGINE
Chen Cao, Xian Aerospace Propulsion Institute, China

IAC21/C4/64506

SYSTEM ANALYSIS OF FEED SYSTEM COUPLED COMBUSTION STABILITY IN LIQUID ROCKET ENGINES
Meng Dong, Xi'an Aerospace Propulsion Institute, China

IAC21/D2/64081

REUSABLE EARTH-MOON TRANSFER STAGE DEPARTING FROM AND RETURNING BACK TO LEO SPACE STATION FOR MANNED LUNAR EXPLORATION FLIGHT
Shuting Wang, China Academy of Launch Vehicle Technology, China

IAC21/D4/63444

DYNAMIC ANALYSIS OF SPACE ELEVATOR SYSTEM AFTER TETHER BREAKAGE
Feng Zhang, China Academy of Launch Vehicle Technology (CALT), China

IAC21/E7/63624

LUNAR MISSIONS TREATY REGULATION: PROPOSING A REVISED OR AN ALTERNATIVE MOON AGREEMENT
Jiaying Yu, The University of Hong Kong, Hong Kong

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, 25 Oct,	15:15	Umm Al Kwain
A1.2	Human Physiology in Space	Tue, 26 Oct,	09:45	Umm Al Kwain
A1.3	Medical Care for Humans in Space	Tue, 26 Oct,	14:45	Umm Al Kwain
A1.4	Medicine in Space and Extreme Environments	Wed, 27 Oct,	14:45	Umm Al Kwain
A1.5	Radiation Fields, Effects and Risks in Human Space Missions	Thu, 28 Oct,	09:45	Umm Al Kwain
A1.6	Astrobiology and Exploration	Thu, 28 Oct,	14:45	Umm Al Kwain
A1.7	Life Support, habitats and EVA Systems	Fri, 29 Oct,	09:45	Umm Al Kwain
A1.8	Biology in Space	Fri, 29 Oct,	13:30	
A1.IP	Interactive Presentations - IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
A2 IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM				
A2.1	Gravity and Fundamental Physics	Mon, 25 Oct,	15:15	Sheikh Rachid A
A2.2	Fluid and Materials Sciences	Wed, 27 Oct,	09:45	Sheikh Rachid A
A2.3	Microgravity Experiments from Sub-Orbital to Orbital Platforms	Wed, 27 Oct,	14:45	Sheikh Rachid A
A2.4	Science Results from Ground Based Research	Thu, 28 Oct,	09:45	Sheikh Rachid A
A2.5	Facilities and Operations of Microgravity Experiments	Thu, 28 Oct,	14:45	Sheikh Rachid A
A2.6	Microgravity Sciences on board ISS and beyond	Fri, 29 Oct,	09:45	Sheikh Rachid A
A2.7	Life and Physical Sciences under reduced Gravity	Fri, 29 Oct,	13:30	Sheikh Rachid A
A2.IP	Interactive Presentations - IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
A3 IAF SPACE EXPLORATION SYMPOSIUM				
A3.1	Space Exploration Overview	Mon, 25 Oct,	15:15	Sheikh Maktoum A
A3.2A	Moon Exploration – Part 1	Tue, 26 Oct,	09:45	Sheikh Maktoum A
A3.2B	Moon Exploration – Part 2 + Special Panel “Space, Moon and Mars: Inspiration and Discovery for Society, Humanities and Arts”	Tue, 26 Oct,	14:45	Sheikh Maktoum A
A3.2C	Moon Exploration – Part 3	Fri, 29 Oct,	09:45	Sheikh Maktoum A
A3.3A	Mars Exploration – missions current and future	Wed, 27 Oct,	09:45	Sheikh Maktoum A
A3.3B	Mars Exploration – Science, Instruments and Technologies	Wed, 27 Oct,	14:45	Sheikh Maktoum A
A3.4A	Small Bodies Missions and Technologies (Part 1)	Thu, 28 Oct,	09:45	Sheikh Maktoum A
A3.4B	Small Bodies Missions and Technologies (Part 2)	Fri, 29 Oct,	13:30	Sheikh Maktoum A
A3.5	Solar System Exploration including Ocean Worlds	Thu, 28 Oct,	14:45	Sheikh Maktoum A
A3.IP	Interactive Presentations - IAF SPACE EXPLORATION SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
A4 50th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps				
A4.1	SETI 1: SETI Science and Technology	Tue, 26 Oct,	09:45	Sheikh Rachid A
A4.2	SETI 2: SETI and Society	Tue, 26 Oct,	14:45	Sheikh Rachid A
A4.IP	Interactive Presentations - 50th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps	Thu, 28 Oct,	13:15	IP Area

Nr.	Session name	Date	Time	Room
A5 24th IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM				
A5.1	Human Exploration of the Moon and Cislunar Space	Wed, 27 Oct,	09:45	Al Ain J
A5.2	Human Exploration of Mars	Wed, 27 Oct,	14:45	Al Ain J
A5.3-B3.6	Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia	Thu, 28 Oct,	09:45	Sheikh Maktoum B
A5.4-D2.8	Space Transportation Solutions for Deep Space Missions	Fri, 29 Oct,	09:45	Sheikh Maktoum D
A5.IP	Interactive Presentations - 24th IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM	Thu, 28 Oct,	13:15	IP Area
A6 19th IAA SYMPOSIUM ON SPACE DEBRIS				
A6.1	Space Debris Detection, Tracking and Characterization - SST	Mon, 25 Oct,	15:15	Sheikh Rachid C
A6.10-B6.5	Joint Space Operations / Space Debris Session – STM Operations	Fri, 29 Oct,	13:30	Sheikh Maktoum B
A6.2	Modeling and Risk Analysis	Wed, 27 Oct,	14:45	Sheikh Rachid C
A6.3	Impact-Induced Mission Effects and Risk Assessments	Wed, 27 Oct,	09:45	Sheikh Rachid C
A6.4	Mitigation - Tools, Techniques and Challenges - SEM	Tue, 26 Oct,	14:45	Sheikh Rachid C
A6.5	Post Mission Disposal and Space Debris Removal 1 - SEM	Thu, 28 Oct,	09:45	Sheikh Rachid C
A6.6	Post Mission Disposal and Space Debris Removal 2 - SEM	Thu, 28 Oct,	14:45	Sheikh Rachid C
A6.7	Operations in Space Debris Environment, Situational Awareness - SSA	Fri, 29 Oct,	13:30	Sheikh Rachid C
A6.8-E9.1	Political, Legal, Institutional and Economic Aspects of Space Debris Mitigation and Removal - STM Security	Fri, 29 Oct,	09:45	Sheikh Rachid C
A6.9	Orbit Determination and Propagation - SST	Tue, 26 Oct,	09:45	Sheikh Rachid C
A6.IP	Interactive Presentations - 19th IAA SYMPOSIUM ON SPACE DEBRIS	Thu, 28 Oct,	13:15	IP Area
A7 IAF SYMPOSIUM ON ONGOING AND NEAR FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS				
A7.1	Space Agency Strategies and Plans	Mon, 25 Oct,	15:15	Al Ain A
A7.2	Science Goals and Drivers for Future Exoplanet, Space Astronomy and Space Physics	Wed, 27 Oct,	09:45	Al Ain A
A7.3	Technology Needs for Future Missions, Systems, and Instruments	Wed, 27 Oct,	14:45	Al Ain A
A7.IP	Interactive Presentations - IAF SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND SPACE PHYSICS	Thu, 28 Oct,	13:15	IP Area
B1 IAF EARTH OBSERVATION SYMPOSIUM				
B1.1	International Cooperation in Earth Observation Missions	Mon, 25 Oct,	15:15	Abu Dhabi A
B1.2	Future Earth Observation Systems	Wed, 27 Oct,	09:45	Abu Dhabi A
B1.3	Earth Observation Sensors and Technology	Wed, 27 Oct,	14:45	Abu Dhabi A
B1.4	Earth Observation Data Management Systems	Thu, 28 Oct,	09:45	Abu Dhabi A
B1.5	Earth Observation Applications, Societal Challenges and Economic Benefits	Thu, 28 Oct,	14:45	Abu Dhabi A
B1.6	21st Anniversary of the Disaster Charter: History, Status and Future of this Powerful and Productive International Cooperation	Fri, 29 Oct,	09:45	Dubai D
B1.IP	Interactive Presentations - IAF EARTH OBSERVATION SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
B2 IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM				
B2.1	Advances in Space-based Communication Systems and Services, Part 1	Tue, 26 Oct,	09:45	Al Ain F
B2.2	Advances in Space-based Communication Systems and Services, Part 2	Tue, 26 Oct,	14:45	Al Ain F

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Nr.	Session name	Date	Time	Room
B2.3	Advances in Space-based Communication Systems and Services, Part 3	Wed, 27 Oct,	09:45	Al Ain F
B2.4	Advances in Space-based Communication Technologies, Part 1	Wed, 27 Oct,	14:45	Al Ain F
B2.5	Advances in Space-based Communication Technologies, Part 2	Thu, 28 Oct,	09:45	Al Ain F
B2.6	Advances in Space-based Navigation Systems, Services, and Applications	Thu, 28 Oct,	14:45	Al Ain F
B2.7	Advances in Space-based Navigation Technologies	Fri, 29 Oct,	13:30	Al Ain F
B2.8-GTS.3	Space Communications and Navigation Global Technical Session	Mon, 25 Oct,	15:15	Dubai D
B2.IP	Interactive Presentations - IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
B3 IAF HUMAN SPACEFLIGHT SYMPOSIUM				
B3.1	Governmental Human Spaceflight Programmes (Overview)	Mon, 25 Oct,	15:15	Sheikh Maktoum B
B3.2	Commercial Human Spaceflight Programmes	Tue, 26 Oct,	09:45	Sheikh Maktoum B
B3.3	Utilization & Exploitation of Human Spaceflight Systems	Tue, 26 Oct,	14:45	Sheikh Maktoum B
B3.4-B6.4	Flight & Ground Operations aspects of Human Spaceflight - Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia	Wed, 27 Oct,	09:45	Sheikh Maktoum B
B3.5	Astronaut Training, Accommodation, and Operations in Space	Wed, 27 Oct,	14:45	Sheikh Maktoum B
B3.6-A5.3	Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia	Thu, 28 Oct,	09:45	Sheikh Maktoum B
B3.7	Advanced Systems, Technologies, and Innovations for Human Spaceflight	Thu, 28 Oct,	14:45	Sheikh Maktoum B
B3.8	Human Space & Exploration	Fri, 29 Oct,	09:45	Sheikh Maktoum B
B3.9-GTS.2	Human Spaceflight Global Technical Session	Fri, 29 Oct,	13:30	Dubai D
B3.IP	Interactive Presentations - IAF HUMAN SPACEFLIGHT SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
B4 28th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS				
B4.1	22nd Workshop on Small Satellite Programmes at the Service of Developing Countries	Tue, 26 Oct,	09:45	Sheikh Rachid D
B4.2	Small Space Science Missions	Mon, 25 Oct,	15:15	Sheikh Rachid D
B4.3	Small Satellite Operations	Tue, 26 Oct,	14:45	Sheikh Rachid D
B4.4	Small Earth Observation Missions	Wed, 27 Oct,	09:45	Sheikh Rachid D
B4.5	Access to Space for Small Satellite Missions	Wed, 27 Oct,	14:45	Sheikh Rachid D
B4.5A-C4.8	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	Thu, 28 Oct,	14:45	Ajman D
B4.6A	Generic Technologies for Small/Micro Platforms	Thu, 28 Oct,	09:45	Sheikh Rachid D
B4.6B	Generic Technologies for Nano/Pico Platforms	Fri, 29 Oct,	13:30	Sheikh Rachid D
B4.7	Constellations and Distributed Systems	Thu, 28 Oct,	14:45	Sheikh Rachid D
B4.8	Small Spacecraft for Deep-Space Exploration	Fri, 29 Oct,	09:45	Sheikh Rachid D
B4.9-GTS.5	Small Satellite Missions Global Technical Session	Thu, 28 Oct,	14:45	Dubai D
B4.IP	Interactive Presentations - 28th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS	Thu, 28 Oct,	13:15	IP Area
B5 IAF SYMPOSIUM ON INTEGRATED APPLICATIONS				
B5.1	Tools and Technology in Support of Integrated Applications	Mon, 25 Oct,	15:15	Abu Dhabi B
B5.2	Integrated Applications End-to-End Solutions	Wed, 27 Oct,	14:45	Dubai C
B5.3	Satellite Commercial Applications	Thu, 28 Oct,	09:45	Dubai C

Nr.	Session name	Date	Time	Room
B6 IAF SPACE OPERATIONS SYMPOSIUM				
B6.1	Ground Operations - Systems and Solutions	Tue, 26 Oct,	14:45	Dubai C
B6.2	New Space Operations Concepts and Advanced Systems	Thu, 28 Oct,	14:45	Dubai C
B6.3	Mission Operations, Validation, Simulation and Training	Fri, 29 Oct,	09:45	Dubai C
B6.4-B3.4	Flight & Ground Operations of HSF Systems - A Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia	Wed, 27 Oct,	09:45	Sheikh Maktoum B
B6.5-A6.10	Joint Space Operations / Space Debris Session – STM Operations	Fri, 29 Oct,	13:30	Sheikh Maktoum B
B6.IP	Interactive Presentations - IAF SPACE OPERATIONS SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
C1 IAF ASTRODYNAMICS SYMPOSIUM				
C1.1	Guidance, Navigation and Control (1)	Mon, 25 Oct,	15:15	Sheikh Maktoum C
C1.2	Guidance, Navigation and Control (2)	Tue, 26 Oct,	09:45	Sheikh Maktoum C
C1.3	Guidance, Navigation & Control (3)	Tue, 26 Oct,	14:45	Sheikh Maktoum C
C1.4	Mission Design, Operations & Optimization (1)	Wed, 27 Oct,	09:45	Sheikh Maktoum C
C1.5	Mission Design, Operations & Optimization (2)	Wed, 27 Oct,	14:45	Sheikh Maktoum C
C1.6	Orbital Dynamics (1)	Thu, 28 Oct,	09:45	Sheikh Maktoum C
C1.7	Orbital Dynamics (2)	Thu, 28 Oct,	14:45	Sheikh Maktoum C
C1.8	Attitude Dynamics (1)	Fri, 29 Oct,	09:45	Sheikh Maktoum C
C1.9	Attitude Dynamics (2)	Fri, 29 Oct,	13:30	Sheikh Maktoum C
C1.IP	Interactive Presentations - IAF ASTRODYNAMICS SYMPOSIUM	,		
C2 IAF MATERIALS AND STRUCTURES SYMPOSIUM				
C2.1	Space Structures I - Development and Verification (Space Vehicles and Components)	Mon, 25 Oct,	15:15	Rais Al Khaimah
C2.2	Space Structures II - Development and Verification (Deployable and Dimensionally Stable Structures)	Tue, 26 Oct,	09:45	Rais Al Khaimah
C2.3	Space Structures - Dynamics and Microdynamics	Tue, 26 Oct,	14:45	Rais Al Khaimah
C2.4	Advanced Materials and Structures for High Temperature Applications	Wed, 27 Oct,	09:45	Rais Al Khaimah
C2.5	Advancements in Materials Applications and Rapid Prototyping	Wed, 27 Oct,	14:45	Rais Al Khaimah
C2.6	Space Environmental Effects and Spacecraft Protection	Thu, 28 Oct,	09:45	Rais Al Khaimah
C2.7	Space Vehicles – Mechanical/Robotic/Thermal/Fluidic Systems	Thu, 28 Oct,	14:45	Rais Al Khaimah
C2.8	Specialized Technologies, Including Nanotechnology	Fri, 29 Oct,	09:45	Rais Al Khaimah
C2.9	Smart Materials and Adaptive Structures	Fri, 29 Oct,	13:30	Rais Al Khaimah
C2.IP	Interactive Presentations - IAF MATERIALS AND STRUCTURES SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
C3 IAF SPACE POWER SYMPOSIUM				
C3.1	Solar Power Satellite	Tue, 26 Oct,	09:45	Abu Dhabi A
C3.2	Wireless Power Transmission Technologies and Application	Tue, 26 Oct,	14:45	Abu Dhabi A
C3.3	Advanced Space Power Technologies	Thu, 28 Oct,	09:45	Dubai D
C3.4	Space Power System for Ambitious Missions	Fri, 29 Oct,	09:45	Abu Dhabi A
C3.5-C4.10	Joint Session on Advanced and Nuclear Power and Propulsion Systems	Fri, 29 Oct,	13:30	Ajman D
C3.IP	Interactive Presentations - IAF SPACE POWER SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area

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C4	IAF SPACE PROPULSION SYMPOSIUM			
C4.1	Liquid Propulsion (1)	Mon, 25 Oct,	15:15	Ajman D
C4.10-C3.5	Joint Session on Advanced and Nuclear Power and Propulsion Systems	Fri, 29 Oct,	13:30	Ajman D
C4.2	Liquid Propulsion (2)	Wed, 27 Oct,	09:45	Ajman D
C4.3	Solid and Hybrid Propulsion (1)	Tue, 26 Oct,	09:45	Ajman D
C4.4	Solid and Hybrid Propulsion (2)	Wed, 27 Oct,	09:45	Umm Al Kwain
C4.5	Electric Propulsion (1)	Tue, 26 Oct,	14:45	Ajman D
C4.6	Electric Propulsion (2)	Wed, 27 Oct,	14:45	Ajman D
C4.7	Hypersonic Air-breathing and Combined Cycle Propulsion, and Hypersonic Vehicle	Thu, 28 Oct,	09:45	Ajman D
C4.8-B4.5A	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	Thu, 28 Oct,	14:45	Ajman D
C4.9	New Missions Enabled by New Propulsion Technology and Systems	Fri, 29 Oct,	09:45	Ajman D
C4.IP	Interactive Presentations - IAF SPACE PROPULSION SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
D1	IAF SPACE SYSTEMS SYMPOSIUM			
D1.1	Innovative and Visionary Space Systems	Mon, 25 Oct,	15:15	Al Ain J
D1.2	Space Systems Architectures	Tue, 26 Oct,	09:45	Al Ain J
D1.3	Technologies to Enable Space Systems	Tue, 26 Oct,	14:45	Al Ain J
D1.4A	Space Systems Engineering - Methods, Processes and Tools (1)	Thu, 28 Oct,	09:45	Al Ain J
D1.4B	Space Systems Engineering - Methods, Processes and Tools (2)	Thu, 28 Oct,	14:45	Al Ain J
D1.5	Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards.	Fri, 29 Oct,	09:45	Al Ain J
D1.6	Cooperative and Robotic Space Systems	Fri, 29 Oct,	13:30	Al Ain J
D1.IP	Interactive Presentations - IAF SPACE SYSTEMS SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
D2	IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM			
D2.1	Launch Vehicles in Service or in Development	Mon, 25 Oct,	15:15	Sheikh Maktoum D
D2.2	Launch Services, Missions, Operations, and Facilities	Tue, 26 Oct,	09:45	Sheikh Maktoum D
D2.3	Upper Stages, Space Transfer, Entry & Landing Systems	Tue, 26 Oct,	14:45	Sheikh Maktoum D
D2.4	Future Space Transportation Systems	Wed, 27 Oct,	09:45	Sheikh Maktoum D
D2.5	Technologies for Future Space Transportation Systems	Wed, 27 Oct,	14:45	Sheikh Maktoum D
D2.6	Future Space Transportation Systems Verification and In-Flight Experimentation	Thu, 28 Oct,	09:45	Sheikh Maktoum D
D2.7	Small Launchers: Concepts and Operations	Thu, 28 Oct,	14:45	Sheikh Maktoum D
D2.8-A5.4	Space Transportation Solutions for Deep Space Missions	Fri, 29 Oct,	09:45	Sheikh Maktoum D
D2.9-D6.2	Emerging Global Space Ventures, including Reusability and other Innovations	Fri, 29 Oct,	13:30	Sheikh Maktoum D
D2.IP	Interactive Presentations - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
D3	19th 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, 27 Oct,	09:45	Sharja D
D3.2A	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Systems	Wed, 27 Oct,	14:45	Sharja D
D3.2B	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies	Fri, 29 Oct,	09:45	Sharja D

Nr.	Session name	Date	Time	Room
D3.3	Space Technology and System Management Practices and Tools	Fri, 29 Oct,	13:30	Sharja D
D3.IP	Interactive Presentations - 19th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT	Thu, 28 Oct,	13:15	IP Area
D4 19th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE				
D4.1	Innovative Concepts and Technologies	Mon, 25 Oct,	15:15	Sharja D
D4.2	Contribution of Moon Village to Solving Global Societal Issues	Tue, 26 Oct,	09:45	Sharja D
D4.3	Space Elevator as Transportation Infrastructure to Access Space	Tue, 26 Oct,	14:45	Sharja D
D4.4	Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond	Thu, 28 Oct,	09:45	Sharja D
D4.5	Space Resources, the Enabler of the Earth-Moon Ecosphere	Thu, 28 Oct,	14:45	Sharja D
D4.IP	Interactive Presentations - 19th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE	Thu, 28 Oct,	13:15	IP Area
D5 54th IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES				
D5.1	Quality and Safety, always a beginning!	Tue, 26 Oct,	09:45	Al Ain B
D5.2	Knowledge management in the digital transformation	Wed, 27 Oct,	09:45	Al Ain B
D5.3	Prediction, Testing, Measurement and Effects of space environment on space missions	Thu, 28 Oct,	09:45	Al Ain B
D5.4	Cybersecurity in space systems, risks and countermeasures	Fri, 29 Oct,	13:30	Al Ain A
D5.IP	Interactive Presentations - 54th IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES	Thu, 28 Oct,	13:15	IP Area
D6 IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES				
D6.1	Commercial Spaceflight Safety and Emerging Issues	Mon, 25 Oct,	15:15	Al Ain F
D6.2-D2.9	Emerging Global Space Ventures, including Reusability and other Innovations	Fri, 29 Oct,	13:30	Sheikh Maktoum D
D6.3	Enabling safe commercial spaceflight: vehicles and spaceports	Fri, 29 Oct,	09:45	Al Ain F
E1 IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM				
E1.1	Ignition - Primary Space Education	Mon, 25 Oct,	15:15	Sharja A
E1.2	Lift Off - Secondary Space Education	Tue, 26 Oct,	09:45	Sharja A
E1.3	On Track - Undergraduate Space Education	Tue, 26 Oct,	14:45	Sharja A
E1.4	In Orbit - Postgraduate Space Education	Wed, 27 Oct,	09:45	Sharja A
E1.5	Enabling the Future - Developing the Space Workforce	Wed, 27 Oct,	14:45	Sharja A
E1.6	Calling Planet Earth - Space Outreach to the General Public	Thu, 28 Oct,	09:45	Sharja A
E1.7	New Worlds - Non-Traditional Space Education and Outreach	Thu, 28 Oct,	14:45	Sharja A
E1.8	Hands-on Space Education and Outreach	Fri, 29 Oct,	09:45	Sharja A
E1.9	Space Culture – Public Engagement in Space through Culture	Fri, 29 Oct,	13:30	Sharja A
E1.IP	Interactive Presentations - IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
E2 49th STUDENT CONFERENCE				
E2.1	Student Conference - Part 1	Mon, 25 Oct,	15:15	Dubai C
E2.2	Student Conference - Part 2	Tue, 26 Oct,	09:45	Dubai D
E2.3-GTS.4	Student Team Competition	Tue, 26 Oct,	14:45	Dubai D
E2.4	Educational Pico and Nano Satellites	Wed, 27 Oct,	09:45	Dubai D

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E3 34th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS				
E3.1	International cooperation in using space for sustainable development: Towards a 'Space2030' agenda	Tue, 26 Oct,	09:45	Al Ain A
E3.2	The future of space exploration and innovation	Tue, 26 Oct,	14:45	Al Ain A
E3.3	Space Economy - New models and economic approaches for private space ventures, with an emphasis on the needs of emerging space nations	Thu, 28 Oct,	09:45	Al Ain A
E3.4	Assuring a Safe, Secure and Sustainable Environment for Space Activities	Fri, 29 Oct,	09:45	Al Ain A
E3.5-E7.6	35th IAA/IISL Scientific Legal Roundtable: Conversations about Commercialization	Thu, 28 Oct,	09:45	Abu Dhabi B
E3.6	Economics of Procurement in Space Contracting	Thu, 28 Oct,	14:45	Al Ain A
E3.IP	Interactive Presentations - 34th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS	Thu, 28 Oct,	13:15	IP Area
E4 55th IAA HISTORY OF ASTRONAUTICS SYMPOSIUM				
E4.1	Memoirs & Organisational Histories	Thu, 28 Oct,	09:45	Ajman A
E4.2	Scientific and Technical Histories	Thu, 28 Oct,	14:45	Ajman A
E4.3	History of Middle Eastern Contribution to Astronautics and Astronomy	Fri, 29 Oct,	09:45	Ajman A
E5 32nd IAA SYMPOSIUM ON SPACE AND SOCIETY				
E5.1	Space Architecture: Habitats, Habitability, and Bases	Mon, 25 Oct,	15:15	Al Ain B
E5.2	Is Space R&D Truly Fostering A Better World For Our Future?	Tue, 26 Oct,	14:45	Al Ain B
E5.3	Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach	Wed, 27 Oct,	14:45	Al Ain B
E5.4	Space Assets and Disaster Management	Fri, 29 Oct,	09:45	Al Ain B
E5.5	Sharing space achievements and heritage: space museums and societies	Fri, 29 Oct,	13:30	Al Ain B
E5.IP	Interactive Presentations - 32nd IAA SYMPOSIUM ON SPACE AND SOCIETY	Thu, 28 Oct,	13:15	IP Area
E6 IAF BUSINESS INNOVATION SYMPOSIUM				
E6.1	Entrepreneurship and Innovation: The Practitioners' Perspectives	Fri, 29 Oct,	13:30	Dubai C
E6.2	Finance and Investment: The Practitioners' Perspectives	Wed, 27 Oct,	09:45	Dubai C
E6.3	Innovation: The Academics' Perspectives	Thu, 28 Oct,	14:45	Abu Dhabi B
E6.4	Strategic Risk Management for Successful Space & Defence Programmes	Tue, 26 Oct,	09:45	Dubai C
E6.5-GTS.1	Entrepreneurship Around the World	Wed, 27 Oct,	14:45	Dubai D
E6.IP	Interactive Presentations - IAF BUSINESS INNOVATION SYMPOSIUM	Thu, 28 Oct,	13:15	IP Area
E7 IISL COLLOQUIUM ON THE LAW OF OUTER SPACE				
E7.1	IISL Young Scholars session and Dr. Jasentuliyana Keynote lecture by a leading space law expert	Tue, 26 Oct,	09:45	Abu Dhabi B
E7.2	International cooperation on the way to the Moon and Mars	Tue, 26 Oct,	14:45	Abu Dhabi B
E7.3	A new look at (how far are we with) Space Traffic Management	Wed, 27 Oct,	09:45	Abu Dhabi B
E7.4	The relations between Trade Law, Finance and Space Law	Wed, 27 Oct,	14:45	Abu Dhabi B
E7.5	National space law and security – an update	Fri, 29 Oct,	09:45	Abu Dhabi B
E7.6-E3.5	35th IAA/IISL Scientific Legal Roundtable: Conversations about Commercialization	Thu, 28 Oct,	09:45	Abu Dhabi B
E7.7	NewSpace and Space Law	Fri, 29 Oct,	13:30	Abu Dhabi B
E7.IP	Interactive Presentations - IISL COLLOQUIUM ON THE LAW OF OUTER SPACE	Thu, 28 Oct,	13:15	IP Area

Nr.	Session name	Date	Time	Room
E8	IAA MULTILINGUAL ASTRONAUTICAL TERMINOLOGY SYMPOSIUM			
E8.1	Multilingual Astronautical Terminology	Fri, 29 Oct,	13:30	Abu Dhabi A
E9	IAF SYMPOSIUM ON SPACE SECURITY			
E9.1-A6.8	Political, Legal, Institutional and Economic Aspects of Space Debris Mitigation and Removal - STM Security	Fri, 29 Oct,	09:45	Sheikh Rachid C
E9.2	Cyber-based security threats to space missions: establishing the legal, institutional and collaborative framework to counteract them	Thu, 28 Oct,	14:45	Al Ain B
E9.IP	Interactive Presentations - IAF SYMPOSIUM ON SPACE SECURITY	Thu, 28 Oct,	13:15	IP Area

8 Technical Papers by Symposium

Technical Papers as of October 2021.

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, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation;

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

October 25 2021, 15:15 — Umm Al Kwain

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

Rapporteur(s): Vadim Gushin, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation;

IAC-21.A1.1.1 (confirmed)

THE ICE-Q: A TOOL FOR THE ASSESSMENT OF PSYCHOLOGICAL ADAPTATION PROCESSES (PAP) IN ISOLATED AND CONFINED EXTREME (ICE) ENVIRONMENTS

Michel Nicolas, France

IAC-21.A1.1.2 (confirmed)

COMPARISON OF THE CREW-MCC COMMUNICATION PARAMETERS DURING ROUTINE AND STRESSFUL DAYS

Natalya Supolkina, IBMP, Russian Federation

IAC-21.A1.1.3 (confirmed)

GENERAL TENDENCIES IN EXTERNAL COMMUNICATION OF THE AUTONOMOUS CREWS UNDER SIMULATION OF INTERPLANETARY MISSIONS

Dmitry Shved, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

IAC-21.A1.1.4 (video)

RE-PAIRING TO REPAIR: A COUNTERMEASURE THAT ENHANCES CREW RELATIONS IN DEEP SPACE

Brennan Antone, Northwestern University, United States

IAC-21.A1.1.5 (confirmed)

SEXUAL WELLBEING & SEXUAL SECURITY IN ISOLATION & CONFINEMENT ENVIRONMENTS (SWICE)

Dorothee Grevers, Charité Universitätsmedizin Berlin, Germany

IAC-21.A1.1.7 (confirmed)

ANALOGUE EVA RESULTS FROM HI-SEAS FOR DEVELOPMENT OF THE RXEVA HUMAN FACTORS SUBSYSTEM

Lea Smart Miller, Embry-Riddle Aeronautical University, United States

IAC-21.A1.1.8 (confirmed)

MULTI-SENSORY VIRTUAL REALITY ENVIRONMENT FOR THE MAINTENANCE OF LONG-TERM BEHAVIORAL HEALTH

Renee Woodruff, Texas A&M University, United States

A1.2. Human Physiology in Space

October 26 2021, 09:45 — Umm Al Kwain

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; Alain Maillat, MEDES - IMPS, France;

IAC-21.A1.2.2 (confirmed)

CHANGES IN THE NIGHT SLEEP ARCHITECTURE AND BLOOD PRESSURE DURING 21-DAY DRY IMMERSION

Evgeny Bersenev, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

IAC-21.A1.2.4 (video)

A COMPUTATIONAL MODEL-BASED FRAMEWORK FOR HOLISTIC MITIGATION OF SPATIAL DISORIENTATION IN SENSORY-DEPRIVED ENVIRONMENTS

Jordan Dixon, University of Colorado Boulder, United States

IAC-21.A1.2.5 (confirmed)

ALTERATION OF THE RELATIONSHIP BETWEEN VENTRICULAR REPOLARIZATION AND HEART RATE INDUCED BY 60-DAY HEAD-DOWN BED REST

Sarah Solbiati, Politecnico di Milano, Italy

IAC-21.A1.2.6 (video)

MICROGRAVITY-INDUCED REDUCED JUGULAR VEIN FLOW IS MORE PRONOUNCED ON THE NON-DOMINANT SIDE

Mimi Lan, Dartmouth College, United States

IAC-21.A1.2.7 (confirmed)

INVESTIGATING THE EFFECTS OF PAIRED HEEL-RAISE AND SQUAT EXERCISE FOLLOWING CENTRIFUGATION ON CEREBROVASCULAR FLOW USING A SHORT-ARM HUMAN CENTRIFUGE (SAHC)

Donya Naz Divsalar, Simon Fraser University, Canada

IAC-21.A1.2.8 (confirmed)

STUDY OF THE DYNAMICS OF BIOCHEMICAL MARKERS OF BONE METABOLISM IN THE PARTICIPANTS OF A 120-DAY ISOLATION IN A HERMETICALLY CLOSED CHAMBER (SIRIUS-19)

Galina Vassilieva, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

IAC-21.A1.2.10 (confirmed)

COSMONAUTES WITH ORBITAL FLIGHT EXPERIENCE WILL BE MORE SUCCESSFUL IN PERFORMING MARS MISSION TASKS

Elena Fomina, State Scientific Center of Russian Federation, Institute of Biomedical Problems, Russian Academy of Sciences, Russian Federation

IAC-21.A1.2.11 (confirmed)

ADAPTIVE CHANGES IN THE PARAMETERS OF THE CARDIOVASCULAR SYSTEM DURING THE ACUTE PERIOD OF ADAPTATION TO WEIGHTLESSNESS AND DURING THE PERIOD OF RECOVERY AFTER SHORT-TERM SPACE FLIGHT

Elena Luchitskaya, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

A1.3. Medical Care for Humans in Space

October 26 2021, 14:45 — Umm Al Kwain

Co-Chair(s): Satoshi Iwase, Aichi Medical University, Japan; Oleg Orlov, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation;

Rapporteur(s): Ulrich Kuebler, Airbus DS GmbH, Germany; Hasan Birol Cotuk, , Turkey;

IAC-21.A1.3.3 (confirmed)

METHODOLOGICAL INNOVATION/ADAPTATION FOR SYSTEMATIC REVIEWS FOR SPACE MEDICINE

Mona Nasser, University of Plymouth, United Kingdom

IAC-21.A1.3.5 (confirmed)

KYMIRA: ASTRONAUT PHYSIOLOGICAL HEALTH MONITORING USING SMART UNDERLAYER GARMENT.
ASHFAQ GILKAR, *United Kingdom*

IAC-21.A1.3.6 (confirmed)

FRIDGE – THE NEXT GENERATION FREEZER / REFRIGERATOR / INCUBATOR FOR FOOD AND EXPERIMENT CONDITIONING ONBOARD THE ISS
Tobias Niederwieser, *University of Colorado Boulder, United States*

IAC-21.A1.3.8 (confirmed)

THE HEART RATE VARIABILITY VALUES ALTERATION DURING 8-HOUR COMPENSATION OF THE EARTH'S MAGNETIC FIELDS
Evgeny Bersenev, *Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation*

IAC-21.A1.3.12 (confirmed)

PHARMACEUTICAL STABILITY AFTER EXPOSURE TO VACUUM
Jennifer Fleischer, *Duke University, United States*

A1.4. Medicine in Space and Extreme Environments

October 27 2021, 14:45 — Umm Al Kwain

Co-Chair(s): Oleg Orlov, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation; Hanns-Christian Gunga, Charité Universitätsmedizin Berlin, Germany;
Rapporteur(s): Jeffrey R. Davis, Exploring 4 Solutions, United States; Alexander Chouker, University of Munich, Germany;

IAC-21.A1.4.1 (confirmed)

DEVICES FOR CARDIOVASCULAR CONTROL: WHEN SPACE AND EARTH TACKLE COMMON CHALLENGES
Tanya Scalia, *Italian Space Agency (ASI), Italy*

IAC-21.A1.4.3 (confirmed)

SPACE MEDICINE FOR AUSTERE I.C.E (ISOLATED, CONFINED, ENVIRONMENTS: TRAINING ANALOG ASTRONAUTS MARS MEDICS TEAMS IN HIGH-FIDELITY ANALOG MISSIONS IN NEPAL, HIMALAYAS - A CASE STUDY FOR FUTURE PLANETARY SURFACE EXPEDITIONS
Susan Ip-Jewell, *United States*

IAC-21.A1.4.4 (confirmed)

COPING WITH ISOLATION DURING COVID-19: A GLOBAL SPACE ANALOGY
Karoly Schlosser, *Institute of Management Studies, Goldsmiths, Hungary*

IAC-21.A1.4.5 (confirmed)

CAVE DIVING AS AN APPROPRIATE HIGH-FIDELITY ANALOG TO STUDY BEHAVIOURAL HEALTH IN SPACE
Karoly Schlosser, *Institute of Management Studies, Goldsmiths, Hungary*

IAC-21.A1.4.7 (confirmed)

ADVANCED TECHNOLOGY FOR ENHANCING AUTONOMY IN SPACE MEDICINE
Adam Sirek, *Institute for Earth and Space Exploration, Western University, Canada*

IAC-21.A1.4.9 (video)

THE OVERVIEW EFFECT: A NEW INTERDISCIPLINARY METHODOLOGY AND POTENTIAL APPLICATIONS
Maya Perlmutter, *The Ohio State University, United States*

IAC-21.A1.4.11 (confirmed)

ELECTRICAL MUSCLE STIMULATION EXOSKELETON SUIT TO MITIGATE MUSCULOSKELETAL ATROPHY FOR AEROSPACE MISSIONS AND REHABILITATION THERAPY.
Diana Estela Mendoza Sánchez, *Mexico*

IAC-21.A1.4.14 (confirmed)

STUDY OF THE HUMAN CARDIORESPIRATORY SYSTEM DURING A LONG STAY AT THE ANTARCTIC VOSTOK STATION IN RELATION TO THE FUTURE LONG-TERM INHABITED MOON BASE
Dr. Evgeny Bersenev, *Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation*

IAC-21.A1.4.15 (confirmed)

WHAT ABOUT SUPPORTING MISSION SUPPORT? THE EVOLVING ROLE OF PSYCHOLOGY IN MISSION SUPPORT CENTER.
Karoly Schlosser, *Institute of Management Studies, Goldsmiths, Hungary*

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

October 28 2021, 09:45 — Umm Al Kwain

Co-Chair(s): Edgar Bering, University of Houston, United States;
Rapporteur(s): Premkumar Saganti, Prairie View A&M University, United States;

IAC-21.A1.5.1 (confirmed)

SPACE RADIATION FIELD CHARACTERIZATION USING THE ASTROPARTICLE OPERATING DETECTORS.
Alessandro Bartoloni, *National Institute of Nuclear Physics - INFN, Italy*

IAC-21.A1.5.3 (confirmed)

THE LIDAL EXPERIMENT ON BOARD ISS
Livio Narici, *University of Rome and INFN "Tor Vergata", Italy*

IAC-21.A1.5.4 (confirmed)

COMFORT AND HUMAN FACTORS ASTRO RAD RADIATION GARMENT EVALUATION (CHARGE) ON THE ISS
Kathleen Coderre, *Lockheed Martin (Space Systems Company), United States*

IAC-21.A1.5.6 (confirmed)

COMPARATIVE AND COMPUTATIONAL ANALYSIS OF SOLIBACILLUS KALAMII UV DAMAGE REPAIR PROTEINS
Rida Fatima, *Pakistan*

IAC-21.A1.5.7 (confirmed)

ANALYSIS OF COMPOSITION OF MARTIAN REGOLITH FOR VIABILITY OF FUNGAL CELLS TO ASSIST IN PLANT GROWTH AND BIOREMEDIATION OF RADIATION THROUGH MYCO-FILTRATION.
Ilankuzhali Elavarasan, *Space Development Nexus, SDNx, India*

IAC-21.A1.5.8 (confirmed)

SPACE RADIATION IN A LONG-TERM HUMAN MISSIONS: RISK ASSESSMENT ON THE MOON AND IT'S IMPACT ON THE PLANTS
Funmilola Adebisi Oluwafemi, *National Space Research and Development Agency (NASRDA), Abuja, Nigeria*

IAC-21.A1.5.10 (confirmed)

SPACE RADIATION SHIELDING BY WATER DOME IN ASTRAX LUNAR CITY ON THE MOON
Taichi Yamazaki, *ASTRAX, Inc., Japan*

IAC-21.A1.5.11 (confirmed)

PRELIMINARY RADIATION ENVIRONMENTAL ANALYSIS AND SHIELDING DESIGN STRATEGIES FOR FUTURE VENUS EXPLORATION MISSIONS
Jack Rosenthal, *University of Leicester, United Kingdom*

A1.6. Astrobiology and Exploration

October 28 2021, 14:45 — Umm Al Kwain

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

Rapporteur(s): Stefan Leuko, DLR (German Aerospace Center), Germany;

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25-29 October 2021 | Dubai, United Arab Emirates

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IAC-21.A1.6.1 (confirmed)

EXTENDED HABITABLE ZONE AND BIOSIGNATURE DETECTION OF M-DWARF PLANETS

Amri Wandel, The Hebrew University of Jerusalem, Israel

IAC-21.A1.6.2 (confirmed)

IMPACT SHOCK SYNTHESIS OF CYSTEINE: EXPLORING THE CREATION OF LIFE'S PRECURSORS BEYOND EARTH

Vassilia Spathis, University of Kent, United Kingdom

IAC-21.A1.6.3 (confirmed)

SUPER RESISTANCE OF DSDNA TO GAMMA-RADIATION DAMAGE AT DEEP COLD (-195.80C)

Sergey Bulat, Federal State Institution Russian Research Center Kurchatov Institute, Russian Federation

IAC-21.A1.6.4 (confirmed)

PUSHING THE LIMITS OF LIFE: WHAT ARE THE PROTEOMETABOLOMIC MECHANISMS USED BY DEINOCOCCUS RADIODURANS TO RESIST THE DAMAGING EFFECTS OF OXIDATIVE STRESS INDUCED BY EXTREME RADIATION DOSES?

Laura Molares Moncayo, École Normale Supérieure, France

IAC-21.A1.6.10 (confirmed)

SCIENCE AND AUTONOMOUS EXPLORATION OF A TERRESTRIAL LAVA TUBE: A STRUCTURED PLANETARY CAVE MISSION SIMULATION

Jennifer Blank, National Aeronautics and Space Administration (NASA), Ames Research Center /Blue Marble Space Institute of Science, United States

A1.7. Life Support, habitats and EVA Systems

October 29 2021, 09:45 — Umm Al Kwain

Co-Chair(s): Klaus Slenzka, Blue Horizon s.à r.l., Germany; Khalid Badri, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates;

Rapporteur(s): Hong Liu, Beihang University, China;

IAC-21.A1.7.3 (confirmed)

OXYGEN AND FOOD PRODUCTION USING A MICROALGAE PHOTOBIOREACTOR FOR A LUNAR BASE

Gisela Detrell, Institute of Space Systems, University of Stuttgart, Germany

IAC-21.A1.7.4 (confirmed)

AUTOMATED PRODUCTION OF MICROALGAE AS AN EFFICIENT FOOD SOURCE FOR FUTURE MANNED MISSIONS TO MARS.

Matjaz Vidmar, The University of Edinburgh, United Kingdom

IAC-21.A1.7.6 (confirmed)

ANALYSIS OF PLANT MORPHOLOGY AND PHYLOGENETICS OF INDIGENOUS PLANTS AS A SOURCE OF FOOD, OXYGEN AND MEDICINAL PURPOSES FOR SPACE APPLICATIONS AND HABITATS.

Ilankuzhali Elavarasan, Space Development Nexus, SDNx, India

A1.8. Biology in Space

October 29 2021, 13:30 —

Co-Chair(s): Didier Chaput, Centre National d'Etudes Spatiales (CNES), France; Fengyuan Zhuang, Beihang University, China;

Rapporteur(s): Jancy McPhee, The Aerospace Corporation, United States;

IAC-21.A1.8.2 (confirmed)

CHARACTERIZING THE EFFECTS OF SIMULATED MICROGRAVITY ON CYTOTOXICITY OF HUMAN NATURAL KILLER CELLS

Marieke de Korte, University of Toronto, Canada

IAC-21.A1.8.5 (confirmed)

DEVELOPMENT OF AN ALOE VERA AND CELLULOSE BASED BEAD TO AID THE GROWTH OF EDIBLE CROPS ON MARS REGOLITH

Axel Garcia-Burgos, Massachusetts Institute of Technology (MIT), United States

IAC-21.A1.8.6 (confirmed)

DUAL CULTURE IN MICROGRAVITY CONDITIONS: POTENTIAL APPLICATION IN THE STUDY OF SYMBIOTIC AND ANTAGONISTIC INTERACTIONS FOR PLANT GROWTH IN SPACE.

Fiorella Arias Bonilla, Costa Rica Institute of Technology (ITCR), Costa Rica

IAC-21.A1.8.8 (confirmed)

IMPACT OF MICROGRAVITY ENVIRONMENT ON GUT BACTERIAL METABOLITES

Naveed Khan, University of Sharjah, United Arab Emirates

IAC-21.A1.8.9 (confirmed)

INVESTIGATING THE EFFECTS OF GRAVITY ON THE GENETIC REGULATION OF HUMAN TELOMERES

Anthony Piro, University of Toronto, Canada

IAC-21.A1.8.14 (confirmed)

SPACEFLIGHT-INDUCED EFFECTS ON OCULAR RESPONSE AND BLOOD-RETINA BARRIER FUNCTION

Xiao Wen Mao, Loma Linda University, United States

IAC-21.A1.8.15 (confirmed)

SUTURE IN SPACE: PREPARATION OF AN EXPERIMENT ON THE HEALING OF SUTURED WOUNDS ON BOARD THE ISS

Monica Monici, University of Firenze, Italy

IAC-21.A1.8.16 (confirmed)

THE ETHICAL CODE FOR OUTER SPACE

ZVI SEVER, Israel

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

October 28 2021, 13:15 — IP Area

Co-Chair(s): Didier Chaput, Centre National d'Etudes Spatiales (CNES), France; Klaus Slenzka, Blue Horizon s.à r.l., Germany;

IAC-21.A1.IP.1 (confirmed)

INTERNATIONAL COOPERATION IN THE IMPLEMENTATION OF SCIENTIFIC MEDICAL AND BIOLOGICAL RESEARCH AND EXPERIMENTS ON THE ISS

Elena Luchitskaya, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

▶ IAC-21.A1.IP.3 (video)

ANALOG SELECTION TOOL: CHARACTERIZING THE CHALLENGES OF MIMICKING THE SPACEFLIGHT ENVIRONMENT ON EARTH

May Li Uy, International Space University (ISU), France

IAC-21.A1.IP.4 (confirmed)

STUDY OF SOLAR RADIATION IN MARS

SANDhYA RAO, India

▶ IAC-21.A1.IP.6 (video)

CENTRIFUGAL FLASH DISTILLER FOR LIFE SUPPORT SYSTEM

Andrii Solomakha, Kyiv Polytechnic Institute (NTUU "KPI"), Ukraine

IAC-21.A1.IP.7 (confirmed)

CONCEPTUAL DESIGN OF MARTIAN HABITAT AND LIFE SUPPORT SYSTEM USING IN-SITU RESOURCES

Anand Nagesh, Spaceonova, India

IAC-21.A1.IP.12 (confirmed)

RESEARCH OF MONITORING THE USE OF GARMENT, UNDERWEAR AND PERSONAL HYGIENE MEANS IN 17-DAY AND 120-DAY ISOLATION CONDITIONS OF THE SIRIUS PROJECT

Irina Shumilina, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

IAC-21.A1.IP.13 (confirmed)

OXYGEN AND ENERGY FOR INTERPLANETARY TRAVELS

Miguel Ángel Serrano, Universidad Panamericana de Ciudad de México, Mexico

IAC-21.A1.IP.14 (confirmed)

BACTERIAL POSSIBILITIES FOR SUSTAINABILITY ON MARS – IN-SITU RESOURCE UTILIZATION WITH MICROORGANISMS

Diana Pawlicki, University of Lodz, Poland

IAC-21.A1.IP.15 (confirmed)

IMPROVED LEAK-PROOF HELMET FOR SPACE EXPLORERS
Chelsea Bahenduzi, Concordia University, Canada

IAC-21.A1.IP.16 (video)

DESIGN OF PERFORMGLOVE FOR QUANTIFYING PERFORMANCE OF SCIENTIFIC FIELDWORK TASKS WHEN WEARING A MARS EXTRAVEHICULAR MOBILITY UNIT (MEMU) GLOVE
Nina Purvis, Queen Mary University of London, United Kingdom

IAC-21.A1.IP.19 (confirmed)

PULSED ELECTROMAGNETIC FIELDS (PEMF) TO SUSTAIN LIFE IN SPACE COLONIES AND HABITATS
Kolemann Lutz, Mars University, United States

IAC-21.A1.IP.20 (confirmed)

THE UNSOLVED CHALLENGES OF SPACE BIOSPHERES: A RESEARCH AGENDA
Floriana Scarpisi, Space Exploration Project group, Space Generation Advisory Council (SGAC), The Netherlands

IAC-21.A1.IP.21 (confirmed)

BIOSYSTEMS TO FEED ON MARS: CONSIDERATIONS ABOUT HIGH-PERFORMANCE SYSTEMS FOR OPTIMAL SPACE GREENHOUSE OPERATION
Davi Alves Feitosa Souza, Federal University of Rio Grande do Norte (UFRN), Brazil

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 25 2021, 15:15 — Sheikh Rachid A

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-21.A2.1.2 (confirmed)

NOVEL CPT ON-BOARD ATOMIC CLOCK TECHNOLOGY FOR GALILEO SECOND GENERATION
Roland Le Goff, SODERN, France

IAC-21.A2.1.3 (confirmed)

THE ACES OPERATIONAL CONCEPT: HOW TO TURN THE ISS INTO A HIGHLY ACCURATE SPACE-TIME PROBE.
Mauro Augelli, Centre National d'Etudes Spatiales (CNES), France

IAC-21.A2.1.4 (confirmed)

THE SHAPIRO TIME DELAY IN THE EARTH'S GRAVITATIONAL FIELD
Claus Lämmerzahl, ZARM Fab GmbH, Germany

IAC-21.A2.1.5 (confirmed)

GENERAL RELATIVISTIC GEODESY - THE NEW SHAPE OF THE EARTH
Claus Lämmerzahl, ZARM Fab GmbH, Germany

IAC-21.A2.1.6 (confirmed)

NUMERICAL SIMULATION OF DIFFERENT COLLISION SCENARIOS OF INTERSTELLAR MOLECULAR CLOUDS
Boris Rybakin, Scientific research Institute for System Studies, Russian Academy of Sciences (RAS), Russian Federation

IAC-21.A2.1.8 (confirmed)

SUPERMASSIVE BLACK HOLES IN GALAXIES AND SIMILARITIES TO CALCULATIONS OF GRAVITATIONAL LAGRANGE POINTS
Dylan J. Slocki, University at Buffalo, United States

A2.2. Fluid and Materials Sciences

October 27 2021, 09:45 — Sheikh Rachid A

Co-Chair(s): Nickolay N. Smirnov, Lomonosov Moscow State University, Russian Federation; Satoshi Matsumoto, Japan Aerospace Exploration Agency (JAXA), Japan;

Rapporteur(s): Thomas Driebe, DLR (German Aerospace Center), Germany;

IAC-21.A2.2.1 (confirmed)

MICROGRAVITY INVESTIGATION OF CAPILLARY DRIVEN SEEPAGE FLOWS IN ARTIFICIAL POROUS MEDIA AND NATURAL SANDS
Evgeniya Skryleva, Lomonosov Moscow State University, Russian Federation

IAC-21.A2.2.2 (confirmed)

A HIGHER SCIENCE RETURN WITH MODULAR INSTRUMENTS?
Malika De Ridder, QinetiQ Space nv, Belgium

IAC-21.A2.2.3 (confirmed)

LIQUID DROPLET COMBUSTION IN WEIGHTLESSNESS: DOUBLE FLAME MATHEMATICAL MODEL AND EXPERIMENTAL RESULTS
Veronika Tyurenkova, Scientific Research Institute for System Analysis, Russian Academy of Sciences (RAS), Russian Federation

IAC-21.A2.2.6 (confirmed)

MODELING OF COMBUSTION OF SOLID FUEL IN HYBRID ENGINE SYSTEMS
Lyuben Stamov, Scientific Research Institute for System Analysis, Russian Academy of Sciences (RAS), Russian Federation

IAC-21.A2.2.9 (confirmed)

STRESS INTENSITY FACTORS FOR BRANCHING CRACKS
Anastasia Shamina, Scientific Research Institute for System Analysis, Russian Academy of Sciences (RAS), Russian Federation

IAC-21.A2.2.10 (confirmed)

WATER IN THE SPACE
Miguel Ángel Serrano, Universidad Panamericana de Ciudad de México, Mexico

IAC-21.A2.2.14 (confirmed)

APPLICATION OF TORSIONAL STRESSES ON VISCOUS AND NEWTONIAN FLUIDS IN MICROGRAVITY – A PROPOSAL FOR A NOVEL ROUTE
Diksha Arora, Ramaiah Institute of Technology, India

A2.3. Microgravity Experiments from Sub-Orbital to Orbital Platforms

October 27 2021, 14:45 — Sheikh Rachid A

Co-Chair(s): Raffaele Savino, University of Naples "Federico II", Italy; Rainer Willnecker, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-21.A2.3.1 (confirmed)

DESIGN AND ANALYSIS FOR CENTRIFUGAL CASTING OF WAX ON SUBORBITAL AND ORBITAL PLATFORMS
Javier Stober, Massachusetts Institute of Technology (MIT), United States

IAC-21.A2.3.2 (video)

NUMERICAL ANALYSIS OF TWO-PHASE FLOW AND HEAT TRANSFER IN A HEAT PIPE MODEL IN VIEW OF THE SRWF EXPERIMENT
Anselmo Cecere, Università degli Studi di Napoli "Federico II", Italy

IAC-21.A2.3.4 (video)

MITIGATION STRATEGIES FOR ON-ORBIT FLUID SLOSH DEVELOPMENT INDUCED BY REFUELING: SLAT SCREEN SOLUTION
Sobia Nadeem, McMaster University, Canada

IAC-21.A2.3.5 (confirmed)

QUANTIFICATION OF THE IMPACT OF GRAVITY ON ISOTHERMAL EQUIAXED ALLOY SOLIDIFICATION USING MACHINE LEARNING
Jonathan Mullen, University College Dublin (UCD), Ireland

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IAC-21.A2.3.7 (confirmed)

MICROGRAVITY FOR EVERYONE - THE UPCOMING SUBORBITAL EXPRESS SOUNDING ROCKET MISSION FOR SCIENCE, TECHNOLOGY AND COMMERCIAL APPLICATIONS – A MISSION OUTLINE

Stefan Krämer, Swedish Space Corporation, Sweden

IAC-21.A2.3.10 (confirmed)

OPPORTUNITIES FOR MICROGRAVITY AND HYPERGRAVITY EXPERIMENTS UNDER THE UNITED NATIONS ACCESS TO SPACE FOR ALL INITIATIVE: ACHIEVEMENTS IN 2020-2021

Jorge Del Rio Vera, United Nations Office for Outer Space Affairs, Austria

A2.4. Science Results from Ground Based Research

October 28 2021, 09:45 — Sheikh Rachid A

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, Lomonosov Moscow State University, Russian Federation;

IAC-21.A2.4.1 (confirmed)

MULTI-PHASE COMBUSTION IN WEIGHTLESSNESS

Nickolay N. Smirnov, Lomonosov Moscow State University, Russian Federation

IAC-21.A2.4.4 (video)

VERIFICATION OF THE SCATTERING MECHANISM OF CELESTIAL SURFACE OBJECTS BY THRUSTER INJECTION

Maiko Yamakawa, The Graduate University for Advanced Studies (SOKENDAI), Japan

IAC-21.A2.4.8 (confirmed)

EXPERIMENTAL INVESTIGATION OF PERTURBATION GROWTH IN LAMINAR JETS

Linar Gareev, Lomonosov Moscow State University, Russian Federation

A2.5. Facilities and Operations of Microgravity Experiments

October 28 2021, 14:45 — Sheikh Rachid A

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-21.A2.5.1 (confirmed)

FIRST OPERATION OF ZARM'S NEXT-GENERATION MICROGRAVITY FACILITY

Thorben Könemann, ZARM Fab GmbH, Germany

IAC-21.A2.5.2 (confirmed)

SWEDISH SUBORBITAL EXPRESS – NEW, VERSATILE AND COST-EFFICIENT SUBORBITAL CONCEPT FOR MICROGRAVITY SCIENCE, EDUCATION AND TECHNOLOGY TESTS FOR INSTITUTIONAL AND COMMERCIAL USERS

Kristine Dannenberg, Swedish National Space Board (SNSB), Sweden

IAC-21.A2.5.3 (confirmed)

NEW IDEA OF ASTRAX ZERO-GRAVITY FLIGHT SERVICE USING THE MRJ (MITSUBISHI REGIONAL JET)

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.A2.5.5 (confirmed)

ASTER: DEVELOPING A PLATFORM TO ACHIEVE MICROGRAVITY FOR LOW-COST EXPERIMENTS

Diane Delley, Luleå University of Technology, Sweden

IAC-21.A2.5.7 (confirmed)

3D PRINTING TECHNOLOGY : OFF EARTH MANUFACTURING

K Vinita Babu, Ramaiah Institute of Technology, India

IAC-21.A2.5.8 (confirmed)

DESIGN AND MANUFACTURE OF A TORQUE MEASURING TEST-BED FOR EXPERIMENTAL ATTITUDE CONTROL ACTUATORS

Christian Korn, Institute of Space Systems, University of Stuttgart, Germany

IAC-21.A2.5.10 (confirmed)

FASTER: REACTION WHEEL STABILIZED PLATFORM TO IMPROVE MICROGRAVITY CONDITIONS FOR EXPERIMENTS IN PARABOLIC FLIGHTS

Juan Gracia García-Lisbona, Luleå University of Technology, Sweden

A2.6. Microgravity Sciences on board ISS and beyond

October 29 2021, 09:45 — Sheikh Rachid A

Co-Chair(s): Stefan Van Vaerenbergh, Université Libre de Bruxelles, Belgium; Angelika Diefenbach, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-21.A2.6.1 (confirmed)

DECLIC EVO: FINAL TOUCHES BEFORE REFLIGHT

Remi Canton, Centre National d'Etudes Spatiales (CNES), France

IAC-21.A2.6.2 (confirmed)

MINIATURIZED FLUORESCENCE MICROSCOPE FOR BIOLOGICAL RESEARCH IN SPACE

Kiira Tiensuu, Aboa Space Research Oy, Finland

IAC-21.A2.6.4 (confirmed)

MUSA: AN ICECUBES EXPERIMENT USING A DUAL CULTURE TO ASSESS THE EFFECTIVENESS OF MICROGRAVITY EFFECTS ON THE TRICHODERMA HARZIANUM FUNGI TO TREAT THE PANAMA DISEASE.

Carlos Rodríguez, Instituto Tecnológico de Costa Rica (TEC), Costa Rica

IAC-21.A2.6.5 (confirmed)

EXPERIMENTS ON COLORING SOAP BUBBLES UNDER MICROGRAVITY

Taichi Yamazaki, ASTRAX, Inc., Japan

A2.7. Life and Physical Sciences under reduced Gravity

October 29 2021, 13:30 — Sheikh Rachid A

Co-Chair(s): Angelika Diefenbach, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Cora Thiel, University of Zurich, Switzerland; Peter Graef, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Satoshi Matsumoto, Japan Aerospace Exploration Agency (JAXA), Japan;

IAC-21.A2.7.1 (confirmed)

EXPERIMENT VERIFICATION TEST OF THE ARTEMIS I 'DEEP SPACE RADIATION GENOMICS' EXPERIMENT

Luis Zea, University of Colorado Boulder, United States

IAC-21.A2.7.2 (confirmed)

PREPARATION FOR AND PERFORMANCE OF A PSEUDOMONAS AERUGINOSA BIOFILM EXPERIMENT ON BOARD THE INTERNATIONAL SPACE STATION

Pamela Flores, University of Colorado Boulder, United States

IAC-21.A2.7.3 (confirmed)

SEALED AND AUTOMATED INJECTION SYSTEM FOR TIME-SENSITIVE ANALYSIS OF CELLS IN MICROGRAVITY

Erin Richardson, University of Toronto, Canada

IAC-21.A2.7.6 (confirmed)

PLAN.A - CONCEPT OF RESEARCH ON THE EFFECT OF STIMULATION ON BONE CELL CULTURES UNDER LONG-TERM MICROGRAVITY USING LAB-ON-CHIP DEVICES

Adrianna Graja, Wrocław University of Science and Technology, Poland

IAC-21.A2.7.7 (confirmed)

CIPROFLOXACIN EFFICACY AGAINST URINARY TRACT PATHOGENS CULTURED UNDER SIMULATED MICRO-, LUNAR, AND MARTIAN GRAVITIES

Lily A. Allen, University of Colorado Boulder, United States

A2.IP. Interactive Presentations - IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM

October 28 2021, 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-21.A2.IP.1 (confirmed)

COLOR BLINDNESS IN SPACE

Francisco Cuéllar, Iceland

IAC-21.A2.IP.2 (confirmed)

INVESTIGATING LUBRICANTS BEHAVIOUR IN MICROGRAVITY FOR VIBRATION DAMPING PURPOSES.

Szymon Krawczuk, Gdansk University of Technology, Poland

A3. IAF SPACE EXPLORATION SYMPOSIUM

Coordinator(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Bernard Foing, ILEWG "EuroMoonMars", The Netherlands; Stefano Pascali, International Astronautical Federation (IAF),;

A3.1. Space Exploration Overview

October 25 2021, 15:15 — Sheikh Maktoum A

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Kathy Laurini, Dynetics, United States;

Rapporteur(s): Keyur Patel, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Norbert Frischauf, TU Graz, Austria;

IAC-21.A3.1.1 (confirmed)

A STRATEGIC OUTLOOK FOR SPACE EXPLORATION SECTOR

Natalia Larrea Brito, Euroconsult, Canada

IAC-21.A3.1.2 (confirmed)

SYNTHESIS OF THE PLANETARY EXPLORATION - HORIZON 2061 - FORESIGHT EXERCISE

Pierre W. Bousquet, Centre National d'Etudes Spatiales (CNES), France

IAC-21.A3.1.3 (confirmed)

WHY SPACE EXPLORATION WILL BE SOON UNSUSTAINABLE, WITHOUT A SERIOUS CIVILIAN SPACE SETTLEMENT PROGRAMME

Adriano V. Autino, Space Renaissance International, Italy

IAC-21.A3.1.4 (confirmed)

HAEC LUNA: HUMAN ACTUATION AND EXPLORATION CIRCLE

Mariella Graziano, GMV Aerospace & Defence SAU, Spain

IAC-21.A3.1.5 (confirmed)

PLANETARY PROTECTION: AN INTERNATIONAL CONCERN AND RESPONSIBILITY

Athena Coustenis, LESIA - Observatoire de Paris, France

IAC-21.A3.1.7 (confirmed)

DESIGN AND IMPLEMENTATION OF A MODULAR MECHATRONICS INFRASTRUCTURE FOR ROBOTIC PLANETARY EXPLORATION ASSETS

Andre Fonseca Prince, German Aerospace Center (DLR), Germany

IAC-21.A3.1.9 (confirmed)

TECHNOLOGICAL CHALLENGES OF VENUS EXPLORATION

Setareh Saremi, Politecnico di Torino, Italy

IAC-21.A3.1.10 (confirmed)

SPACE EXPLORATION WITH HUMAN-ROBOTIC MISSIONS

Shoubhik Pal, Kurukshetra University, India

IAC-21.A3.1.12 (confirmed)

LONG-TERM ARCHITECTURE DEVELOPMENT FOR THE MOON AND MARS

Greg Chavers, NASA Marshall Space Flight Center, United States

A3.2A. Moon Exploration – Part 1

October 26 2021, 09:45 — Sheikh Maktoum A

Co-Chair(s): Bernard Foing, ILEWG "EuroMoonMars", 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, [unlisted], Canada;

IAC-21.A3.2A.3 (confirmed)

FIRST RESULTS FROM THE MULTI-ROBOT, MULTI-PARTNER, MULTI-MISSION, PLANETARY EXPLORATION ANALOGUE CAMPAIGN ON MT. ETNA IN SUMMER 2021

Armin Wedler, German Aerospace Center (DLR), Germany

IAC-21.A3.2A.4 (confirmed)

VIPER: INTRODUCTION TO THE RESOURCE PROSPECTING MISSION

Daniel Andrews, National Aeronautics and Space Administration (NASA), United States

IAC-21.A3.2A.5 (confirmed)

CURRENT STATUS OF LUMIO MISSION: CHARACTERIZING LUNAR METEOROID IMPACTS WITH A CUBESAT

Francesco Topputo, Politecnico di Milano, Italy

IAC-21.A3.2A.7 (confirmed)

GEOLOGY OF THE LACUS SOMNIORUM REGION OF THE MOON, THE EMIRATE LUNAR MISSION PRIMARY LANDING SITE

Jessica Flahaut, Centre de Recherches Pétrographiques et Géochimiques (CRPG), France

IAC-21.A3.2A.8 (confirmed)

EMS: FAST TRACK DEVELOPMENT OF A MINIATURIZED MASS SPECTROMETER FOR LUNAR APPLICATIONS

Roland Trautner, ESA european space agency, The Netherlands

IAC-21.A3.2A.9 (confirmed)

EUROPEAN ACCESS TO THE LUNAR SURFACE: EL3

Ludovic Duvet, ESA - European Space Agency, United Kingdom

IAC-21.A3.2A.10 (video)

EUROPEAN ACCESS TO THE LUNAR SURFACE: EL3 MISSION OPTIONS

William Carey, European Space Agency (ESA-ESTEC), The Netherlands

IAC-21.A3.2A.11 (confirmed)

LUVMI-X: AN INNOVATIVE INSTRUMENT SUIT AND VERSATILE MOBILITY SOLUTION FOR LUNAR EXPLORATION

Jeremi Gancet, Space Applications Services, Belgium

IAC-21.A3.2A.14 (confirmed)

THE WIDE FIELD CAMERAS ON-BOARD THE EMIRATES LUNAR MISSION'S RASHID ROVER

Cedric Virmontois, Centre National d'Etudes Spatiales (CNES), France

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IAC-21.A3.2A.16 (confirmed)

SMART RESOURCE MANAGEMENT BASED ON INTERNET OF THINGS TO SUPPORT OFF-EARTH MANUFACTURING OF LUNAR INFRASTRUCTURES (SMARTIE)

Anna Barbara Imhof, *Liquifer Systems Group (LSG), Austria*

A3.2B. Moon Exploration – Part 2

October 26 2021, 14:45 — Sheikh Maktoum A

Co-Chair(s): Bernard Foing, ILEWG “EuroMoonMars”, 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, [unlisted], Canada;

IAC-21.A3.2B.3 (confirmed)

CONTROL SYSTEM DESIGN FOR THE ALINA LUNAR LANDER

Stefano Fari, *German Aerospace Center (DLR), Germany*

IAC-21.A3.2B.4 (confirmed)

RASHID ROVER: A SMALL ROVER WITH BIG SCIENCE GOALS

Hamad Almarzooqi, *Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates*

IAC-21.A3.2B.6 (video)

EUROMOONMARS PROGRAMME AND RESULTS 2019-2021

Bernard Foing, *ILEWG “EuroMoonMars”, The Netherlands*

IAC-21.A3.2B.8 (confirmed)

NEXT-GENERATION MISSION OPERATIONS SOFTWARE – A DEMONSTRATION FOR THE EMIRATES LUNAR MISSION

Kaizad Raimalwala, *Mission Control Space Services Inc., Canada*

IAC-21.A3.2B.9 (confirmed)

BUILDING A LUNAR INFRASTRUCTURE WITH THE HELP OF A HETEROGENEOUS (SEMI)AUTONOMOUS MULTI-ROBOTIC TEAM

Shashank Govindaraj, *Space Applications Services N.V./S.A, Belgium*

IAC-21.A3.2B.10 (confirmed)

ADVANCING UTILIZATION OF THE MOON THROUGH CRYOGENIC TECHNOLOGIES

Alvaro Diaz-Flores, *University of Arizona, United States*

IAC-21.A3.2B.12 (confirmed)

SCALE: A COLLABORATIVE PAYLOAD TO DEMONSTRATE MULTIPLE TECHNOLOGIES FOR A LUNAR HABITAT AND INFRASTRUCTURE

Maneesh Kumar Verma, *Delft University of Technology (TU Delft), The Netherlands, The Netherlands*

IAC-21.A3.2B.13 (confirmed)

GATEWAY PROGRAM STATUS AND OVERVIEW

Sean Fuller, *National Aeronautics and Space Administration (NASA), Johnson Space Center, United States*

IAC-21.A3.2B.15 (confirmed)

NEUTRON DETECTOR FOR SURFACE MAPPING OF LUNAR WATER

Robert Filgas, *Czech Technical University In Prague (CTU), Czech Republic*

IAC-21.A3.2B.17 (confirmed)

SOLUTIONS FOR CONSTRUCTION OF A LUNAR BASE – ISU SSP21 LUNAR TEAM PROJECT

Charlotte Pouwels, *ILEWG “EuroMoonMars”, The Netherlands*

A3.2C. Moon Exploration – Part 3

October 29 2021, 09:45 — Sheikh Maktoum A

Co-Chair(s): Bernard Foing, ILEWG “EuroMoonMars”, 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, [unlisted], Canada;

IAC-21.A3.2C.2 (confirmed)

PRELIMINARY STUDIES OF THE USE OF REFLECTED SUNLIGHT, AS A SUSTAINABLE SOLUTION FOR ILLUMINATION AND HUMAN COMFORT AT LUNAR OUTPOST

Hatem Alaa Hussein, *Canada*

IAC-21.A3.2C.3 (confirmed)

ENHANCING TECHNOLOGIES AND OPERATIONS FOR SERVICE TRANSPORTATION IN Cislunar ENVIRONMENT

Andrea Colagrossi, *Politecnico di Milano, Italy*

IAC-21.A3.2C.5 (video)

COOPERATION OF A TEAM OF HETEROGENEOUS SWARM ROBOTS FOR SPACE EXPLORATION

Andrew Barth, *University of Cincinnati, United States*

IAC-21.A3.2C.6 (confirmed)

CONCEPTUAL DESIGN OF A LUNAR DUST REMOVING VEHICLE

Romain Fonteyne, *European Space Agency (ESA-ESTEC), The Netherlands*

IAC-21.A3.2C.8 (confirmed)

A REGOLITH CLOSE-UP IMAGER ON-BOARD THE EMIRATES LUNAR MISSION'S RASHID ROVER

Sebastian Els, *Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates*

IAC-21.A3.2C.9 (confirmed)

HIGH-POWER ELECTRIC PROPULSION AS AN ENABLER FOR MOON MISSIONS

Marcus Collier-Wright, *Neutron Star Systems UG, Germany*

IAC-21.A3.2C.10 (confirmed)

RELATIVE NAVIGATION AND HAZARD DETECTION & AVOIDANCE INTEGRATION FOR AUTONOMOUS MOON LANDING APPLICATIONS

Ludwik Sobiesiak, *NGC Aerospace Ltd., Canada*

IAC-21.A3.2C.11 (confirmed)

HERSCHEL RE-SUPPLY MISSION FEASIBILITY STUDY

Davide Menzio, *University of Luxembourg, Luxembourg*

IAC-21.A3.2C.12 (confirmed)

ASCLEPIOS, LUNAR ANALOG MISSION: STUDENT-LED SCIENCE RESEARCH PLATFORM FOR HUMAN SPACEFLIGHT SIMULATION

Elfie Roy, *Space Engineering Center (eSpace), Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland*

IAC-21.A3.2C.14 (confirmed)

ESA - PROTOTECH - AIRBUS - AIR LIQUIDE: REGENERATIVE FUEL CELL SYSTEM FOR LUNAR NIGHT SURVIVAL

Pascal Barbier, *Air Liquide, France*

IAC-21.A3.2C.15 (confirmed)

CHILEMOONMARS, AND IT ALL BEGAN ON THE SLOPES OF THE OJOS DEL SALADO IN THE PUNA DE ATACAMA

Adrien Tavernier, *Chile*

IAC-21.A3.2C.16 (confirmed)

EXPERIENCE AND LESSONS LEARNT AS CREW-COMMANDER-IN-TRAINING FOR EMMIHS-III LUNAR-ANALOGUE SIMULATION

Priyanka Das Rajkakati, *Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France*

IAC-21.A3.2C.17 (confirmed)

A LANGMUIR PROBE SYSTEM ON-BOARD THE EMIRATES LUNAR MISSION'S RASHID ROVER

Sebastian Els, *Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates*

IAC-21.A3.2C.18 (confirmed)

AN ECONOMICALLY VIABLE LUNAR ISRU PROCESS FOR OXYGEN AND METAL PRODUCTION AND RELATED BENEFITS FOR TERRESTRIAL APPLICATIONS

Achim Seidel, *Airbus Defence and Space, Germany*

A3.3A. Mars Exploration – missions current and future

October 27 2021, 09:45 — Sheikh Maktoum A

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-21.A3.3A.1 (confirmed)

EMIRATES MARS MISSION (EMM) 2020 OVERVIEW AND STATUS
Omran Sharaf, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.A3.3A.2 (confirmed)

DEVELOPMENT OF A MACHINE LEARNING MODEL FOR MARTIAN ELECTRON DENSITY USING MGS DATA
Noora Alameri, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.A3.3A.3 (confirmed)

EXOMARS ROVER AND SURFACE PLATFORM MISSION: APPROACHING THE READINESS FOR FLYING TO MARS
Bruno Musetti, Thales Alenia Space Italia, Italy

IAC-21.A3.3A.4 (confirmed)

MARS SAMPLE RETURN CAMPAIGN - STATUS OF THE ESA PROVIDED ELEMENTS
Kelly Geelen, ESA - European Space Agency, The Netherlands

IAC-21.A3.3A.5 (confirmed)

DEVELOPMENT OF THE SAMPLE FETCH ROVER LOCOMOTION SUBSYSTEM
Paolo Ridolfi, Airbus Defence and Space, United Kingdom

IAC-21.A3.3A.7 (confirmed)

PHASE-A DESIGN OF ICE CREAM: A COST-EFFECTIVE MARS SAMPLE RETURN MISSION
Alberto Chiozzi, Politecnico di Milano, Italy

IAC-21.A3.3A.8 (confirmed)

RESULTS OF THE SEIS AND APSS INSTRUMENTS ONBOARD THE INSIGHT MISSION
Charles Yana, Centre National d'Etudes Spatiales (CNES), France

IAC-21.A3.3A.9 (confirmed)

MARS-PHOBUS SYSTEM DYNAMICS EXPLOITATION FOR MARTIAN EFFECTIVE CONSTELLATIONS DESIGN
Daniele Barberi Spirito, Politecnico di Milano, Italy

IAC-21.A3.3A.10 (confirmed)

COLONIZING MARS: IN-SITU RESOURCE UTILIZATION OF THE MARTIAN MOONS
Vipul Mani, TU Berlin, Germany

A3.3B. Mars Exploration – Science, Instruments and Technologies

October 27 2021, 14:45 — Sheikh Maktoum A

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-21.A3.3B.1 (confirmed)

KEYNOTE: EMIRATES MARS MISSION: SCIENCE INSTRUMENT OVERVIEW
Mariam AlShamsi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.A3.3B.2 (confirmed)

SUPERCAM ONBOARD PERSEVERANCE AT JEZERO CRATER, MARS
Gabriel Pont, Centre National d'Etudes Spatiales (CNES), France

IAC-21.A3.3B.3 (confirmed)

3D MARS, MARTIAN RECOVERY STRUCTURE
Aldo Schirripa Spagnolo, ASI - Italian Space Agency, Italy

IAC-21.A3.3B.4 (confirmed)

NARROW ANGLE CAMERA FOR THE MSR-ERO MISSION
Roland Le Goff, SODERN, France

IAC-21.A3.3B.5 (video)

THE HIGH EFFICIENT CCSDS PROXIMITY-1 BIDIRECTIONAL ARQ COMMUNICATION METHOD FOR MARS EXPLORATION
Jia Tian, China Academy of Space Technology (Xi'an), China

IAC-21.A3.3B.6 (confirmed)

MSPC: RENOVATED EUROPEAN ACCESS TO THE SURFACE OF MARS
Antonella Ferri, Thales Alenia Space Italia (TAS-I), Italy

IAC-21.A3.3B.7 (confirmed)

ADE: ENHANCING AUTONOMY FOR FUTURE PLANETARY ROBOTIC EXPLORATION
Jorge Ocon, GMV Aerospace & Defence SAU, Spain, Spain

A3.4A. Small Bodies Missions and Technologies (Part 1)

October 28 2021, 09:45 — Sheikh Maktoum A

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-21.A3.4A.1 (confirmed)

SAMPLE RETURN ACCOMPLISHED: FLIGHT RESULT OF ASTEROID EXPLORER HAYABUSA2
Yuichi Tsuda, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-21.A3.4A.2 (confirmed)

HAYABUSA2 EARTH RETURN AND SAMPLE RETURN CAPSULE REENTRY
Takanao Saiki, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-21.A3.4A.3 (confirmed)

EXTENDED MISSION OF HAYABUSA2
Yuya Mimasu, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-21.A3.4A.4 (confirmed)

SCIENCE AND OUTREACH OF HAYABUSA2 MISSION
Makoto Yoshikawa, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-21.A3.4A.6 (confirmed)

PRELIMINARY DESIGN OF MARTIAN MOONS EXPLORATION (MMX)
Yasuhiro Kawakatsu, Japan Aerospace Exploration Agency (JAXA), ISAS, Japan

IAC-21.A3.4A.7 (confirmed)

THE MMX ROVER MISSION TO PHOBOS: SCIENCE OBJECTIVES
Stephan Ulamec, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.A3.4A.8 (confirmed)

WHEELED LOCOMOTION IN MILLI-GRAVITY: A TECHNOLOGY EXPERIMENT FOR THE MMX ROVER.
Fabian Buse, German Aerospace Center (DLR), Germany

A3.4B. Small Bodies Missions and Technologies (Part 2)

October 29 2021, 13:30 — Sheikh Maktoum A

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-21.A3.4B.2 (confirmed)

SCIENCE AND PLANETARY DEFENSE OBJECTIVES OF THE ESA HERA MISSION

Patrick Michel, University of Nice-Sophia Antipolis, CNRS, Observatoire de la Cote d'Azur, France

IAC-21.A3.4B.3 (confirmed)

KINETIC IMPACTOR FOR A SHORT WARNING ASTEROID DEFLECTION

Adalberto Domínguez Castillo, GMV Aerospace & Defence SAU, Spain

IAC-21.A3.4B.4 (confirmed)

ARGO: A PLANETARY DEFENSE MISSION TO TEST GRAVITY TRACTION TECHNIQUES

Alessio Bocci, Politecnico di Milano, Italy

IAC-21.A3.4B.6 (confirmed)

GETTING TO ERIS AND MAKEMAKE USING SOLAR ELECTRIC PROPULSION

Edgar Bering, University of Houston, United States

▶ IAC-21.A3.4B.7 (video)

OPTIMIZATION OF HOPPING TRAJECTORIES FOR ASTEROIDS SURFACE EXPLORATION

Andrea Carbone, Sapienza University of Rome, Italy

IAC-21.A3.4B.8 (confirmed)

MULTISPECTRAL IMAGING SENSORS FOR ASTEROIDS RELATIVE NAVIGATION

Margherita Piccinin, Politecnico di Milano, Italy

IAC-21.A3.4B.9 (confirmed)

GUIDANCE AND CONTROL FOR SPACECRAFT AUTONOMOUS LANDING ON SMALL PLANETARY BODIES

Larissa Balestrero Machado, Universität der Bundeswehr München, Germany

A3.5. Solar System Exploration including Ocean Worlds

October 28 2021, 14:45 — Sheikh Maktoum A

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-21.A3.5.1 (confirmed)

EXPLORATORY MISSION TO MERCURY: POSSIBILITIES FOR FUTURE SAMPLE RETURN MISSIONS

Vipul Mani, TU Berlin, Germany

IAC-21.A3.5.2 (confirmed)

FEASIBILITY STUDY OF A SAMPLE RETRIEVAL MISSION TO VENUS

Elia Sindoni, Politecnico di Torino, Italy

IAC-21.A3.5.3 (confirmed)

AUTONOMOUS AEROBRKING IN VENUS: CORRIDOR CONTROL STRATEGIES FOR ENVISION

Pablo Hermosin, Deimos Space SLU, Spain

IAC-21.A3.5.4 (confirmed)

ADVANCED METHODS OF LOW-ENERGY MISSION DESIGN FOR ICY MOONS EXPLORATION

Alexey Grushevskii, Keldysh Institute of Applied Mathematics of RAS, Russian Federation

IAC-21.A3.5.6 (confirmed)

MAGIC: A GEOPHYSICAL MISSION TO THE GALILEAN MOON CALLISTO

Antonio Genova, Sapienza University of Rome, Italy

IAC-21.A3.5.7 (confirmed)

TITAN EXPLORATION AFTER CASSINI-HUYGENS : EVOLUTION FROM FLAGSHIPS TO DRAGONFLY AND BEYOND

Ralph Lorenz, Johns Hopkins University Applied Physics Laboratory, United States

IAC-21.A3.5.8 (confirmed)

TITAN EXPLORATION USING AUTONOMOUS DRONEBOAT WITH SAMPLE ANALYSIS & VISUAL PERSPECTIVE

Prathmesh Barapatre, India

IAC-21.A3.5.9 (confirmed)

ENCELADUS REVISITED: NEW VISIONS FOR CUTTING COSTS AND RISKS IN EXPLORING THE SUBSURFACE OCEAN

Joachim Reinhold, Germany

A3.IP. Interactive Presentations - IAF SPACE EXPLORATION SYMPOSIUM

October 28 2021, 13:15 — IP Area

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Bernard Foing, ILEWG "EuroMoonMars", The Netherlands;

IAC-21.A3.IP.1 (confirmed)

EMIRATES MARS MISSION 2020: EMIRATES MARS ULTRAVIOLET SPECTROMETER (EMUS) OVERVIEW

Fatma Lootah, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.A3.IP.3 (confirmed)

MANUFACTURING AND CHARACTERIZATION OF LUNAR REGOLITH SIMULANTS

Kemal Celik, New York University Abu Dhabi, United Arab Emirates

▶ IAC-21.A3.IP.4 (video)

DESIGN AND FABRICATION OF A LUNAR SOFT ROBOT WITH CRAWLING AND JUMPING LOCOMOTION MODES

Yufei Guo, Northwestern Polytechnical University; National Key Laboratory of Aerospace Flight Dynamics, China

IAC-21.A3.IP.5 (confirmed)

MICROWAVE POWERED EXTRACTION OF WATER ICE FROM THE PERMANENTLY SHADOWED REGIONS ON THE LUNAR SURFACE

Kunal Kulkarni, Technical University Berlin, Germany

IAC-21.A3.IP.6 (confirmed)

EFFICIENT LUNAR-EARTH COMMUNICATION SYSTEM BASED ON SOFTWARE DEFINED RADIO FOR THE EMIRATES LUNAR MISSION

Sara AlMaeeni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.A3.IP.7 (confirmed)

PROJECT DREXCIYA: A PROPOSAL FOR A SPACECRAFT TO ASSESS MINING TECHNIQUES AT A NEAR EARTH ASTEROID

Andre Nowaczek, Asteroid Mining Corporation Ltd UK, United Kingdom

IAC-21.A3.IP.8 (confirmed)

MOON EXPLORATION BY OUTER THE POINT : THE FUTURE OF THE ROBOTIC SCIENCE

Jamel Metmati, THALES Services, France

IAC-21.A3.IP.9 (video)
MOTION PLANNING STRATEGY OF FREE-FLOATING SPACE ROBOT BASED ON DEEP REINFORCEMENT LEARNING TO CAPTURE NON-COOPERATIVE TARGET
Yinong Ouyang, College of Astronautics, Northwestern Polytechnical University, China

IAC-21.A3.IP.12 (confirmed)
THE BRIGHT SIDE OF THE MOON: MULTI-CONSTRAINED OPTIMIZED MAPS IN SUPPORT OF FUTURE MISSION PLANNING
David Bravo Berguño, Thales Alenia Space, Italy

IAC-21.A3.IP.13 (confirmed)
POTENTIAL OF THERMAL IMAGING INSTRUMENTS IN FUTURE ROVER AND LANDER MISSIONS
Gen Ito, Centre de Recherches Pétrographiques et Géochimiques (CRPG), France

IAC-21.A3.IP.14 (confirmed)
PREPARING FOR ARTEMIS AND MOON OUTPOST EXPERIMENTS: TU DUBLIN PROJECTS AT ILEWG EUROMOONMARS 2021 TEAM
Hannah Reilly, ILEWG "EuroMoonMars", Ireland

IAC-21.A3.IP.15 (confirmed)
MAD: AN EXPERIMENT FOR MATERIAL ADHESIVENESS DETERMINATION ON-BOARD THE EMIRATES LUNAR MISSION'S RASHID ROVER
Sara AlMaeeni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.A3.IP.16 (confirmed)
TRAJECTORIES WITH MULTIPLE ATMOSPHERE RE-ENTRIES AND ANISOTROPIC HEAT-SHIELDING MATERIALS: ANALYSIS OF IMPACT ON THE TEMPERATURE REDUCTION ON THE SURFACE OF A RE-ENTRY MODULE
Victor Leonov, Bauman Moscow State Technical University, Russian Federation

IAC-21.A3.IP.17 (confirmed)
LA-MOON BY JPL'S I2F 2020 TEAM LUNAR ASSET MESSAGING AND ON ORBIT NAVIGATION
Chrishma Singh-Derewa, United States

IAC-21.A3.IP.18 (confirmed)
CALIFORNIA RESEARCH ANALOG FOR DEEPSPACE AND LUNAR EXPLORATION (CRADLE)
Chrishma Singh-Derewa, United States

IAC-21.A3.IP.19 (confirmed)
DEVELOPMENT AND PROPERTIES INVESTIGATION OF TLS-01: THE FIRST THAILAND LUNAR REGOLITH SIMULANT
Saran Seehanam, King Mongkut's University of Technology Thonburi, Thailand

IAC-21.A3.IP.21 (confirmed)
MOON LIVING FERMENTERS: AN IN-SITU RESOURCE UTILIZATION TECHNOLOGY DEMONSTRATOR
Álvaro Tomás Soria Salinas, HE Space Operations, Germany

IAC-21.A3.IP.22 (confirmed)
EXPLORING THE MOON - THE KEY IMPORTANCE OF LUNAR LOGISTICS FOR SETTING UP A SUSTAINABLE LUNAR ECOSYSTEM.
Thomas Schrage, Airbus Defence and Space, Germany

IAC-21.A3.IP.23 (video)
PLANETARY LANDER FOR YIELDING EXPLORATION AND RANGING (PLAYER) - CONCEPT FOR A REUSABLE LUNAR LANDER FOR SHUTTLING PAYLOADS WITHIN CIS-LUNAR SPACE
Neelesh Ranjan Saxena, TU Berlin, Germany

IAC-21.A3.IP.27 (confirmed)
DESIGN OF A MARS EXPLORATION MICROROVER CONCEPT FOR FUTURE MISSIONS WITH MODULARITY AND RECONFIGURABILITY CHARACTERISTICS
Efstratios Rigas, University of Patras, Greece

IAC-21.A3.IP.28 (confirmed)
A PROGRAMMED ELECTROMAGNET-SPRING BASED CUBESAT LAUNCH SYSTEM ON LUNAR SURFACE
Ananya Kodukula, Ramaiah Institute of Technology, India

IAC-21.A3.IP.29 (confirmed)
EMIRATES MARS MISSION 2020: EMIRATES EXPLORATION IMAGER (EXI) OVERVIEW
Mariam AlShamsi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.A3.IP.30 (confirmed)
CONCEPT FOR A HELIOSTAT ON-BOARD A ROVER TO ENABLE EXTENDED SURFACE OPERATIONS IN SHADY AREAS ON THE MOON
Sebastian Els, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.A3.IP.32 (confirmed)
EUROMOONMARS-POLAND ANALOG ASTRONAUT CAMPAIGNS OF 2021
Kevin McGrath, ILEWG "EuroMoonMars", Ireland

IAC-21.A3.IP.34 (confirmed)
AUTOMATED DESIGN OF ROBOTS FOR EXPLORING EXTREME ENVIRONMENTS OF MARS FOLLOWING AN ANIMAL SURVIVALIST APPROACH
Himangshu Kalita, University of Arizona, United States

IAC-21.A3.IP.35 (confirmed)
USING MAGNETOMETRY FOR THE EXPLORATION AND MAPPING OF LAVA TUBES ON MAUNA LOA FOR LUNAR AND MARTIAN ANALOGUES
Marc Heemskerck, Vrije Universiteit Amsterdam, The Netherlands

IAC-21.A3.IP.37 (confirmed)
EGYPT'S PARTICIPATION IN THE MVA PESC PROJECT: A REVIEW OF THE GAPS AND OPPORTUNITIES IN PAST AND FUTURE LUNAR MISSIONS
Hoda Elmegharbel, Egyptian Space Agency (EgSA), Egypt

IAC-21.A3.IP.38 (confirmed)
LOOPS-M PROJECT: STRUCTURAL AND BIOGENERATIVE SYSTEMS FOR A SUSTAINABLE LUNAR GREENHOUSE
Riccardo Restivo Alessi, Sapienza University of Rome, Italy

IAC-21.A3.IP.39 (confirmed)
TERRAIN CHARACTERISTICS AND SELECTION OF THE EMIRATES LUNAR MISSION LANDING SITE
Sylvain Breton, Université de Lorraine, France

IAC-21.A3.IP.41 (confirmed)
LUNAR CAVE EXPLORATION USING AUTONOMOUS ROVER SAMPLE COLLECTION & ANALYSIS
Prathmesh Barapatre, India

IAC-21.A3.IP.42 (confirmed)
LUNAR MINING AND MAPPING USING MULTIPURPOSE AUTONOMOUS ROVER
Prathmesh Barapatre, India

IAC-21.A3.IP.43 (confirmed)
PROPOSED HUMAN-ASSISTED ROBOTIC TRAVERSES IN THE NORTHWEST PEAK RING OF THE SCHRÖDINGER BASIN.
Elise Harrington, University of Oslo, Norway

IAC-21.A3.IP.44 (video)
KITE: A NOVEL LUNAR PROPULSION SYSTEM FOR CHARACTERIZING ELECTROSTATIC ENVIRONMENT ON AIRLESS SPACE SOLID BODIES.
Joshua Knicely, University of Alaska-Fairbanks, United States

IAC-21.A3.IP.48 (confirmed)
ANALYSIS OF PHYSICAL PHENOMENA ASSOCIATED WITH ASTEROIDS DEFLECTED BY KINETIC IMPACT
Bruno Chagas, UNESP - São Paulo State University, Brazil

IAC-21.A3.IP.56 (confirmed)
RANDOM VIBRATION AND STRESS ANALYSIS OF THE 3D-PRINTED MINIATURIZED HIGH-RESOLUTION MULTIPLE ELECTRODES HARMONIZED KINGDON TRAP
Anastasiya Fursova, Skolkovo Institute of Science and Technology, Russian Federation

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25–29 October 2021 | Dubai, United Arab Emirates

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IAC-21.A3.IP.57 (confirmed)

TOWARDS ENDOGENOUS MAPPING OF SMALL SOLAR SYSTEM BODIES DURING MULTI-AGENT RENDEZVOUS

Aditya Savio Paul, University of Tartu, Estonia

IAC-21.A3.IP.58 (confirmed)

OPTIMUM LOCATION TO INTERCEPT INTERSTELLAR OBJECTS WITH BUILD-AND-WAIT MISSIONS

Laia Lopez Llobet, International Space University (ISU), France

IAC-21.A3.IP.60 (confirmed)

CANDIDATE LANDING SITES AT THE SOUTH POLE OF THE MOON FOR THE LSAS COMMERCIAL LANDER MISSION

Marine Joulaud, Centre de Recherches Pétrographiques et Géochimiques (CRPG), France

IAC-21.A3.IP.61 (confirmed)

LUNAR HIGHRES-NET: SUPER RESOLUTION FOR LUNAR SURFACE IMAGERY

Jose Ignacio Delgado Centeno, University of Luxembourg, Luxembourg

IAC-21.A3.IP.62 (confirmed)

IDENTIFYING MARTIAN FELDSPATHIC ROCKS WITH VISIBLE NEAR-INFRARED SPECTROSCOPY

Marie Barthez, Centre de Recherches Pétrographiques et Géochimiques (CRPG), France

IAC-21.A3.IP.63 (confirmed)

EMIRATES MARS MISSION: EMIRATES MARS INFRARED SPECTROMETER (EMIRS) OVERVIEW

Khalid Badri, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.A3.IP.64 (confirmed)

ADDITIVE MANUFACTURING OF COMPLEX SHAPE CERAMIC PARTS FROM LUNAR REGOLITH SIMULANT

Maxim Isachenkov, Skolkovo Institute of Science and Technology, Russian Federation

A4. 50th 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 26 2021, 09:45 — Sheikh Rachid A

Co-Chair(s): Andrea Melis, INAF - Istituto Nazionale di Astrofisica, Italy; Beatriz Villarroel, Uppsala University, Sweden;

Rapporteur(s): Franck Marchis, SETI Institute, United States;

IAC-21.A4.1.1 (confirmed)

BREAKTHROUGH LISTEN: GREEN BANK TELESCOPE OBSERVATIONS, ANALYSIS, AND PUBLIC DATA

Steve Croft, University California Berkeley, United States

IAC-21.A4.1.7 (confirmed)

BREAKTHROUGH LISTEN SEARCH FOR INTELLIGENT LIFE IN THE GALACTIC PLANE WITH THE PARKES TELESCOPE

Karen Perez, Columbia University, United States

IAC-21.A4.1.10 (confirmed)

FROM DUST TO TECHNOSIGNATURES: SEARCHING FOR STELLAR OCCULTERS WITH MACHINE LEARNING

Daniel Giles, SETI Institute, United States

IAC-21.A4.1.11 (video)

UPGRADES TO THE ALLEN TELESCOPE ARRAY: WIDE-BAND, WIDE-FIELD RADIO OBSERVATIONS

Wael Farah, SETI Institute, United States

IAC-21.A4.1.13 (confirmed)

SEARCH FOR NANOSECOND OPTICAL TRANSIENTS WITH TAIGA-HISCORE ARRAY FOR THE SETI PROBLEM.

Alexander Panov, Skobeltsyn Institute of Nuclear Physics, Russian Federation

IAC-21.A4.1.15 (video)

NUMERICAL SIMULATIONS FOR POSSIBLE GALACTIC HABITABLE ISLANDS IN THE MILKY WAY

Teófilo Vargas, Universidad Nacional Mayor de San Marcos, Peru

IAC-21.A4.1.17 (confirmed)

THE DRAKE EQUATION AND SETI IN THE JWST ERA

Amri Wandel, The Hebrew University of Jerusalem, Israel

IAC-21.A4.1.18 (confirmed)

MOON FAR SIDE PROTECTION AND ASTRONOMY PROTECTION ARE URGENT

Claudio Maccone, International Academy of Astronautics (IAA) and Istituto Nazionale di Astrofisica (INAF), Italy

A4.2. SETI 2: SETI and Society

October 26 2021, 14:45 — Sheikh Rachid A

Co-Chair(s): Paolo Musso, University of Insubria, Italy; Steve Croft, University California Berkeley, United States;

Rapporteur(s): Nicolò Antonietti, Politecnico di Torino, Italy;

IAC-21.A4.2.2 (video)

"THE READINESS IS ALL" - UNDERSTANDING POST-DETECTION DYNAMICS THROUGH LIVE ACTION ROLE PLAY

Kate Genevieve, University of Sussex, United Kingdom

IAC-21.A4.2.8 (video)

HOW LAW AND ETHICS WOULD NEED TO ADAPT TO THE DISCOVERY OF LIFE

Jordi Sandalinas, Spain

IAC-21.A4.2.9 (confirmed)

STEPS TO FOLLOW AFTER ESTABLISHING CONTACT WITH EXTRA-TERRESTRIALS

Aditya Balasubramaniam, Ramaiah Institute of Technology, India

IAC-21.A4.2.10 (video)

BENEDICT XVI AND SETI

Paolo Musso, University of Insubria, Italy

IAC-21.A4.2.11 (confirmed)

REASSESSMENT OF HABITABILITY AND POTENTIALLY HABITABLE PLANETS THROUGH COMPARTMENTALIZED HABITABLE ZONES (CHZ'S) USING PLANETARY MODELLING AND SIMULATION SOFTWARE

Sagarika Rao Valluri, RNSIT Bangalore, India

IAC-21.A4.2.12 (video)

RADIO BRIDGES OF THE FUTURE BETWEEN SOLAR SYSTEM AND THE NEAREST 100 STARS

Nicolò Antonietti, INAF - IRA, Italy

IAC-21.A4.2.17 (confirmed)

GAMIFICATION METHODS AND GAME THEORY TECHNIQUES FOR ASTROBIOLOGY, HABITABILITY AND EXTRATERRESTRIAL COMMUNICATION- SETI BREAKTHROUGH LISTEN.

Sagarika Rao Valluri, RNSIT Bangalore, India

IAC-21.A4.2.18 (confirmed)

THE NEED FOR A WORLDWIDE AND INTERNATIONAL SETI JOURNAL

Claudio Maccone, International Academy of Astronautics (IAA) and Istituto Nazionale di Astrofisica (INAF), Italy

A5. 24th 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;

Support(s): Stefano Pascali, International Astronautical Federation (IAF),;

A5.1. Human Exploration of the Moon and Cislunar Space

October 27 2021, 09:45 — Al Ain J

Co-Chair(s): Nadeem Ghafoor, [unlisted], Canada; Michael Raftery, Boeing Defense Space & Security, United States;

Rapporteur(s): Marc Haese, DLR, German Aerospace Center, Germany;

IAC-21.A5.1.1 (confirmed)

ADAPTABLE ARTEMIS ARCHITECTURE CONCEPTS FOR LUNAR AND MARS EXPLORATION GOALS

Christine Edwards, Lockheed Martin (Space Systems Company), United States

IAC-21.A5.1.3 (confirmed)

DEVELOPING THE INFRASTRUCTURE TO SUSTAIN LUNAR EXPLORATION: THE THALES ALENIA SPACE VISION

Flavio Bandini, Thales Alenia Space Italia, Italy

IAC-21.A5.1.5 (confirmed)

LUNAR SURFACE CONCEPT OF OPERATIONS FOR THE GLOBAL EXPLORATION ROADMAP LUNAR SURFACE EXPLORATION SCENARIO

Kandyce Goodliff, NASA, United States

IAC-21.A5.1.7 (confirmed)

THE DYNETICS HUMAN LANDING SYSTEM AND STIMULATING THE LUNAR ECONOMY

Kathy Laurini, Dynetics, United States

IAC-21.A5.1.10 (confirmed)

TOWARDS A LUNAR EXPLORATION TECHNOLOGY ADAPTIVE ROADMAP: CONTRIBUTIONS FROM SGAC'S TECHNICAL UNIT RESEARCH FOR A THRIVING LUNAR ECOSYSTEM

Paolo Pino, Polytechnic of Turin, Italy

IAC-21.A5.1.11 (confirmed)

AARAMBH V2, THE FUTURISTIC LUNAR SURFACE VEHICLE

Shreyansh Sharma, R.V.College of Engineering, India

IAC-21.A5.1.12 (confirmed)

SELENE III: CHALLENGES AND LESSONS LEARNED DURING AN ANALOG LUNAR MISSION AT THE HI-SEAS RESEARCH STATION.

Michaela Musilova, International MoonBase Alliance, United States

IAC-21.A5.1.13 (confirmed)

OXYGEN HARVESTING FROM EUKARYOTIC GREEN ALGAE CULTIVATION ON MOON'S SURFACE

Michele Bechini, Politecnico di Milano, Italy

IAC-21.A5.1.15 (confirmed)

LUNAR SURFACE SYSTEMS ARCHITECTURE STUDY TO ENABLE POTENTIAL FOR THE LARGE SCALE INFRASTRUCTURE DEVELOPMENT

Olga Bannova, University of Houston, United States

IAC-21.A5.1.17 (video)

TEMPERATURE PROFILE THROUGH THE THICKNESS OF A DOME HABITAT STRUCTURE ON THE LUNAR SURFACE

SACHIN TRIPATHI, University of Connecticut, United States

IAC-21.A5.1.18 (confirmed)

ELEMENT FORMULATION PROCESS FOR THE MOON AND MARS

Doug Craig, NASA, United States

A5.2. Human Exploration of Mars

October 27 2021, 14:45 — Al Ain J

Co-Chair(s): Maria Antonietta Perino, Thales Alenia Space Italia, Italy; Kathy Laurini, Dynetics, United States;

Rapporteur(s): Norbert Frischauf, TU Graz, Austria;

IAC-21.A5.2.1 (confirmed)

SIERRA NEVADA CORPORATION'S MARS TRANSIT HABITAT

Jeffrey Valania, Sierra Space, United States

IAC-21.A5.2.4 (confirmed)

OPTIMIZATION OF A MARS ISRU SYSTEM USING DATA FROM THE MOXIE EXPERIMENT

Eric Hinterman, Massachusetts Institute of Technology (MIT), United States

IAC-21.A5.2.5 (confirmed)

SUSTAINABLE NITROGEN CYCLE FOR MARS SETTLEMENT: OPERATIONS ANALYSIS, AGRICULTURE, AND SOIL ECOSYSTEM

Kolemann Lutz, Mars University, United States

IAC-21.A5.2.6 (confirmed)

SINGLE STAGE TO ORBIT VEHICLE BETWEEN PHOBOS AND MARS SURFACE.

Jean-Marc Salotti, Laboratoire de l'Intégration du Matériau au Système, France

IAC-21.A5.2.7 (video)

REDMARS - LOWERING THE PERCHLORATE FOR AGRICULTURE ON MARS AND IN-SITU RESOURCE UTILIZATION

Gustavo Alberto Steven Jamanca Lino, Colorado School of Mines, Peru

IAC-21.A5.2.11 (confirmed)

ASSIMILATING THE REQUIREMENT SPECIFICATION FOR MARS MANNED MISSION: A NOVEL APPROACH

Khalfan Al Remeithi, UAE Space Agency, United Arab Emirates

IAC-21.A5.2.12 (confirmed)

RAPID CREWED MISSIONS TO MARS WITH IMPULSIVE THRUST

Paulo J.S. Gil, LAETA, IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Portugal

IAC-21.A5.2.13 (confirmed)

LESSONS LEARNT FROM HUMAN LAVA TUBE EXPLORATION AND RESEARCH DURING SIMULATED LUNAR AND MARTIAN MISSIONS AT THE HI-SEAS SPACE RESEARCH STATION

Michaela Musilova, International MoonBase Alliance, United States

A5.3-B3.6. Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia

October 28 2021, 09:45 — Sheikh Maktoum B

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Mark Hemsell, The British Interplanetary Society, United Kingdom;

Rapporteur(s): Juergen Schlutz, European Space Agency (ESA), Germany;

IAC-21.A5.3-B3.6.5 (confirmed)

TERRAIN-AWARE COMMUNICATION COVERAGE PREDICTION FOR COOPERATIVE NETWORKED ROBOTS IN UNSTRUCTURED ENVIRONMENTS

Emanuel Staudinger, German Aerospace Center (DLR), Germany

IAC-21.A5.3-B3.6.8 (confirmed)

AN INFLATABLE ROBOTIC ASSISTANT FOR ONBOARD APPLICATIONS

Pierpaolo Palmieri, Politecnico di Torino, Italy

IAC-21.A5.3-B3.6.10 (confirmed)

HUMAN AND ROBOTS, A RELATIONSHIP THAT CAN SAVE LIVES

Arantza Méndez Rodríguez, Universidad Panamericana de Ciudad de México, Mexico

A5.4-D2.8. Space Transportation Solutions for Deep Space Missions

October 29 2021, 09:45 — Sheikh Maktoum D

Co-Chair(s): Kenneth Bruce Morris, Sierra Space, United States; Josef Wiedemann, MT Aerospace AG, Germany;
Rapporteur(s): Gerhard Schwehm, ESA (retired), The Netherlands;

IAC-21.A5.4-D2.8.1 (confirmed)
DESIGN OPTIMISATION AND ANALYSIS OF VERY HIGH POWER TRANSPORTATION SYSTEM TO MARS
Christie Maddock, University of Strathclyde, United Kingdom

A5.IP. Interactive Presentations - 24th IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM

October 28 2021, 13:15 — IP Area

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Maria Antonietta Perino, Thales Alenia Space Italia, Italy;

IAC-21.A5.IP.1 (confirmed)
CHARACTERIZATION OF INFORMATION FIDELITY IN ANALOG RESEARCH APPLIED TO COMMUNICATIONS FOR MARS CREWED EXPLORATION MISSIONS
Oscar Ojeda, Purdue University, United States

IAC-21.A5.IP.4 (confirmed)
CHLORIDES FOR IN-SITU RESOURCE UTILIZATION ON MARS
Elise Harrington, University of Oslo, Norway

IAC-21.A5.IP.5 (confirmed)
DESIGN AND ANALYSIS OF SPACE TRANSPORTATION SYSTEMS FOR ASTEROID RESOURCE UTILIZATION : A BASE FOR DEVELOPMENT OF FUTURE MARS HABITATS
Rishin Aggarwal, Space Generation Advisory Council (SGAC), India

A6. 19th IAA SYMPOSIUM ON SPACE DEBRIS

Coordinator(s): Christophe Bonnal, Centre National d'Etudes Spatiales (CNES), France; Riccardo Bevilacqua, Embry-Riddle Aeronautical University, United States;

A6.1. Space Debris Detection, Tracking and Characterization - SST

October 25 2021, 15:15 — Sheikh Rachid C

Co-Chair(s): Mark A. Skinner, The Aerospace Corporation, United States; Moriba Jah, The University of Texas at Austin, United States;
Rapporteur(s): Thomas Schildknecht, SwissSpace Association, Switzerland;

IAC-21.A6.1.1 (confirmed)
A CUBESAT-BASED SPACE SYSTEM TO MONITOR SPACE DEBRIS POPULATION IN LEO
Dmitry Pritykin, Moscow Institute of Physics and Technology (MIPT), Russian Federation

IAC-21.A6.1.2 (confirmed)
STRATHCUBE: THE DESIGN OF A CUBESAT FOR SPACE DEBRIS DETECTION USING IN-ORBIT PASSIVE BISTATIC RADAR
Lewis Creed, University of Strathclyde, United Kingdom

IAC-21.A6.1.3 (confirmed)
A PORTUGUESE RADAR TRACKING SENSOR FOR SPACE DEBRIS MONITORING
João Pandeirada, Instituto de Telecomunicações, Portugal

IAC-21.A6.1.4 (confirmed)
LARID: CONCEPT OF A LARGE AREA LOW RESOURCE INTEGRATED IMPACT DETECTOR
Martin Schimmerohn, Fraunhofer - Institute for High-Speed Dynamics, Germany

IAC-21.A6.1.5 (video)
STREAMLINING GEO SSA DATA ACQUISITION, PROCESSING, AND CONTRIBUTION FROM AN AMATEUR ASTRONOMERS' PERSPECTIVE USING < 1M APERTURE TELESCOPES
Mahhad Nayyer, Graz University of Technology (TU Graz), Pakistan

IAC-21.A6.1.6 (confirmed)
RESULTS OF SMARTNET'S FIRST OBSERVATION CAMPAIGN COVERING THE GEOSTATIONARY RING OVER THE PACIFIC OCEAN
Johannes Herzog, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Germany

IAC-21.A6.1.7 (confirmed)
DETECTING OBJECTS IN THE GEOSTATIONARY RING FROM IMAGE SEQUENCES
Lukasz Tulczyjew, KP Labs, Poland

IAC-21.A6.1.8 (confirmed)
FIREBALLS CAPTURED BY THE UAE METEOR MONITORING NETWORK
Maryam Sharif, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.A6.1.10 (confirmed)
USING AI TO PROCESS LIGHT CURVES FOR GEO OBJECT CHARACTERISATION
Emma Kerr, Deimos Space UK Ltd, United Kingdom

IAC-21.A6.1.11 (confirmed)
RESEARCH AND PERFORMANCE ANALYSIS OF THE SPANISH SURVEILLANCE RADAR
Jan Siminski, ESA - European Space Agency, Germany

IAC-21.A6.1.12 (confirmed)
DEVELOPMENT OF SURVEY TELESCOPES IN THE ISON PROJECT
Igor Molotov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

IAC-21.A6.1.13 (confirmed)
UNISAT-7 AND CASTELGAUSS: JOINT OPERATIONS FOR ENHANCED COOPERATIVE OBJECT DETECTION
Filippo Graziani, G.A.U.S.S. Srl, Italy

A6.2. Modeling and Risk Analysis

October 27 2021, 14:45 — Sheikh Rachid C

Co-Chair(s): Marlon Sorge, The Aerospace Corporation, United States; Dan Oltrogge, COMSPOC Corporation, United States;
Rapporteur(s): Carmen Pardini, ISTI-CNR, Italy;

IAC-21.A6.2.1 (confirmed)
THE IMPACT SATELLITE FRAGMENTATION MODEL
Marlon Sorge, The Aerospace Corporation, United States

IAC-21.A6.2.2 (confirmed)
ENGAGING THE COMMUNITY: THE CO-CREATION OF SPACE DEBRIS MODELS
Vitali Braun, IMS Space Consultancy, Germany

IAC-21.A6.2.3 (confirmed)
ENVIRONMENTAL INDEX FOR FRAGMENTATION IMPACT AND ENVIRONMENT EVOLUTION ANALYSIS
Alessandro Rossi, IFAC-CNR, Italy

IAC-21.A6.2.4 (confirmed)
LEO RISK CONTINUUM – PROVIDING CONTEXT TO CURRENT AND FUTURE COLLISION RISK
Christopher Kunstadter, United States

- IAC-21.A6.2.5 (video)**
CONSIDERATIONS ON THE LISTS OF THE TOP 50 DEBRIS REMOVAL TARGETS
Satomi Kawamoto, Japan Aerospace Exploration Agency (JAXA), Japan
- IAC-21.A6.2.6 (confirmed)**
ASSESSING THE IMPACT OF A SPACE MISSION ON THE SUSTAINABILITY OF THE SPACE ENVIRONMENT
Camilla Colombo, Politecnico di Milano, Italy
- IAC-21.A6.2.7 (confirmed)**
THE EFFICACY OF MANAGING SPACE ENVIRONMENTAL RISK BY REGULATING PROBABILITY OF COLLISION WITH LARGE OBJECTS
Mike Lindsay, Astroscale Pte. LTD, Japan
- IAC-21.A6.2.8 (confirmed)**
SPACE DEBRIS CATEGORIZATION AND SORTING USING MATLAB
Subhadr Gupta, University of Petroleum and Energy Studies, India
- IAC-21.A6.2.9 (confirmed)**
A NOVEL APPROACH FOR THE ACCURATE SIMULATION OF RE-ENTRY FRAGMENTATION
Sai Abhishek Peddakotla, University of Strathclyde, United Kingdom
- IAC-21.A6.2.10 (confirmed)**
THE DESIGN OF A FRAGMENTATION EXPERIMENT FOR A CUBESAT DURING ATMOSPHERIC RE-ENTRY
Julie Graham, University of Strathclyde, Glasgow, United Kingdom

A6.3. Impact-Induced Mission Effects and Risk Assessments

October 27 2021, 09:45 — Sheikh Rachid C

Co-Chair(s): Darren McKnight, LeoLabs, United States; Emma Kerr, Deimos Space UK Ltd, United Kingdom;
Rapporteur(s): Jean-Claude Traينهau, Office National d'Etudes et de Recherches Aéropatiales (ONERA), France;

IAC-21.A6.3.5 (confirmed)
SIMULATING HYPERVELOCITY IMPACT WITH A DISCRETE ELEMENT APPROACH
Erkai Watson, Fraunhofer - Institut für Kurzzeitdynamik, Ernst-Mach-Institut (EMI), Germany

IAC-21.A6.3.6 (confirmed)
ADVANCES IN THE CHARACTERISATION OF COLLISION BREAK-UPS BY MEANS OF NUMERICAL MODELLING
Linda Dimare, Space Dynamics Services s.r.l., Italy

IAC-21.A6.3.7 (confirmed)
INVESTIGATION OF ENVISAT CATASTROPHIC FRAGMENTATION SCENARIOS
Lorenzo Olivieri, CISAS "G. Colombo" - University of Padova, Italy

A6.4. Mitigation - Tools, Techniques and Challenges - SEM

October 26 2021, 14:45 — Sheikh Rachid C

Co-Chair(s): Pierre Omaly, CNES, France;
Rapporteur(s): Holger Krag, European Space Agency (ESA), Germany;

IAC-21.A6.4.1 (confirmed)
ASSESSMENT OF ENVIRONMENTAL CAPACITY THRESHOLDS THROUGH LONG-TERM SIMULATIONS
Francesca Letizia, European Space Agency (ESA), Germany

IAC-21.A6.4.2 (confirmed)
CNES SPACE SUSTAINABILITY INDEX
Pierre Omaly, CNES, France

IAC-21.A6.4.3 (confirmed)
ANALYSIS OF ODMSP-COMPLIANT NEAR-CIRCULAR GPS DISPOSAL ORBITS AND RESULTING LONG-TERM COLLISION RISK
Alan B. Jenkin, The Aerospace Corporation, United States

IAC-21.A6.4.4 (video)
A STRATEGY FOR THE MITIGATION OF DEBRIS SHELLS IN LEO USING SPACE-BASED LASERS
Lewis Walker, University of Strathclyde, United Kingdom

IAC-21.A6.4.5 (confirmed)
BALLOONS, CHUTES, TETHERS, AND MORE: TWENTY YEARS OF INNOVATION AND ON-ORBIT LESSONS LEARNED FOR NANOSATELLITE DISPOSAL
Joseph Gangestad, The Aerospace Corporation, United States

IAC-21.A6.4.6 (confirmed)
CISLUNAR DEBRIS MITIGATION: DEVELOPMENT OF A METHODOLOGY TO ASSESS THE SUSTAINABILITY OF LUNAR MISSIONS.
Paolo Guardabasso, ISAE-Supaero University of Toulouse, France

IAC-21.A6.4.8 (confirmed)
USING THE FLUX OF DEBRIS PIECES TO ASSESS THE CRITICALITY OF THE ENVIRONMENT IN LOW EARTH ORBIT
Carmen Pardini, ISTI-CNR, Italy

IAC-21.A6.4.9 (confirmed)
DEORBIT KIT DEMONSTRATOR MISSION
Lorenzo Tarabini-Castellani, SENER, Spain

IAC-21.A6.4.10 (confirmed)
FUTURE-PROOFING LEO MISSIONS WITH DOCKING PLATES
Harriet Brettle, Astroscale Ltd, United Kingdom

A6.5. Post Mission Disposal and Space Debris Removal 1 - SEM

October 28 2021, 09:45 — Sheikh Rachid C

Co-Chair(s): Balbir Singh, Manipal Institute of Technology, Manipal Academy of Higher Education, India; Roberto Opromolla, University of Naples "Federico II", Italy;
Rapporteur(s): Laurent Francillout, CNES, France;

IAC-21.A6.5.1 (video)
CASCADE ARCHITECTURE FOR ONBOARD ESTIMATION OF AN UNKNOWN, UNCOOPERATIVE SPACE DEBRIS.
Thomas Barbier, Surrey Space Centre, University of Surrey, United Kingdom

IAC-21.A6.5.2 (confirmed)
ENABLING TECHNOLOGIES VALIDATION FOR DEORBITING DEVICES USING ELECTRODYNAMIC TETHERS
Andrea Valmorbidia, University of Padova - DII/CISAS, Italy

IAC-21.A6.5.3 (confirmed)
COMPARISON OF RELATIVE MOTION CONTROL ALGORITHMS FOR POINT CAPTURING OF SPACE DEBRIS OBJECT
Mahdi reza Akhloumadi, Moscow Institute of Physics and Technology (MIPT), Russian Federation

IAC-21.A6.5.5 (video)
OPTIMAL CONTROL OF THE SPACE TETHERED TUG-DEBRIS SYSTEM WITH FUEL RESIDUALS DURING DEORBIT
Chuang Wang, National Key Laboratory of Aerospace Flight Dynamics, Northwestern Polytechnical University, Xi'an, China

IAC-21.A6.5.6 (confirmed)
CUBESAT ONBOARD ALGORITHM FOR SPACE DEBRIS MOTION DETERMINATION BY PROCESSING STEREO IMAGES
Igor V. Belokonov, Samara National Research University (Samara University), Russian Federation

IAC-21.A6.5.7 (confirmed)
PROPULSION FOR DIRECT DEORBITATION – SOLID ROCKET MOTOR WITH THRUST VECTOR CONTROL DEVELOPMENT
Pawel Nowakowski, Łukasiewicz Research Network – Institute of Aviation, Poland

IAC-21.A6.5.9 (confirmed)
RENDEZVOUS AND PROXIMITY OPERATIONS DESIGN OF AN ACTIVE DEBRIS REMOVAL SERVICE TO A LARGE CONSTELLATION FLEET
Giacomo Borelli, Politecnico di Milano, Italy

IAC-21.A6.5.10 (confirmed)

A SIMULATION TOOL FOR ROBOTIC ACTIVE DEBRIS REMOVAL WITH MINIMUM REACTION SPACE MANIPULATOR
Federico Basana, University of Padova - DII, Italy

A6.6. Post Mission Disposal and Space Debris Removal 2 - SEM

October 28 2021, 14:45 — Sheikh Rachid C

Co-Chair(s): John Auburn, Astroscale Ltd, United Kingdom;
Rapporteur(s): Nicolas Bérend, ONERA - The French Aerospace Lab, France;

IAC-21.A6.6.1 (confirmed)

SIMULATION OF THE DYNAMICS OF LARGE SPACE DEBRIS OBJECT GRIPPING BY ONE FLEXIBLE TELESCOPIC ROBOTIC ARM
Vera Mayorova, Bauman Moscow State Technical University, Russian Federation

IAC-21.A6.6.2 (confirmed)

GROUND-BASED LASER MOMENTUM TRANSFER CONCEPT FOR SPACE DEBRIS COLLISION AVOIDANCE
Emiliano Cordelli, GMV, Space Debris Office (SDO), ESA/ESOC, Germany

IAC-21.A6.6.3 (confirmed)

TOWARDS COMMERCIAL ADR SERVICES: THE ELSA-M MISSION
Jason Forshaw, Astroscale Ltd, United Kingdom

▶ IAC-21.A6.6.4 (video)

MOTION PLANNING WITH END-EFFECTOR ATTITUDE CONSTRAINTS FOR FREE-FLOATING SPACE ROBOT
Yongxing Tang, Northwestern Polytechnical University; National Key Laboratory of Aerospace Flight Dynamics, China

A6.7. Operations in Space Debris Environment, Situational Awareness - SSA

October 29 2021, 13:30 — Sheikh Rachid C

Co-Chair(s): Riccardo Bevilacqua, Embry-Riddle Aeronautical University, United States; Vincent Martinot, Thales Alenia Space France, France;
Rapporteur(s): Noelia Sanchez Ortiz, Deimos Space S.L., Spain;

IAC-21.A6.7.1 (confirmed)

ASTERIA : AUTONOMOUS COLLISION RISKS MANAGEMENT
Jerome Thomassin, Centre National d'Etudes Spatiales (CNES), France

▶ IAC-21.A6.7.2 (video)

OPTIMIZATION OF COLLISION AVOIDANCE MANEUVERS IN THE PRESENCE OF UNCERTAINTY
Shrouti Dutta, McGill University, Canada

IAC-21.A6.7.3 (confirmed)

EXAMINING RETRO-REFLECTIVE FOILS FOR USE IN SMALLSAT APPLICATIONS AND SPACE DEBRIS LASER RANGING
Pascal Sauer, TU Darmstadt, Germany

IAC-21.A6.7.4 (confirmed)

SPACE SITUATIONAL AWARENESS (SSA) AND ORBITAL COORDINATION ACTIVITIES FOR SAFE RENDEZVOUS AND PROXIMITY OPERATIONS (RPO) EXPLORED THROUGH THE ELSA-M MISSION
Toby Harris, Astroscale Pte. LTD, United Kingdom

IAC-21.A6.7.5 (confirmed)

MITIGATING CUBESAT CONFUSION: RESULTS OF IN-FLIGHT TECHNICAL DEMONSTRATIONS OF CANDIDATE TRACKING AND IDENTIFICATION TECHNOLOGIES
Mark A. Skinner, The Aerospace Corporation, United States

IAC-21.A6.7.7 (confirmed)

EVALUATING THE PERFORMANCE OF CURRENT AND FUTURE EU SPACE SURVEILLANCE AND TRACKING SYSTEM
Vincent Morand, Centre National d'Etudes Spatiales (CNES), France

IAC-21.A6.7.8 (confirmed)

EVALUATION OF LEO CONJUNCTION RATES USING HISTORICAL FLIGHT SAFETY SYSTEMS AND ANALYTICAL ALGORITHMS
Dan Oltrogge, COMSPOC Corporation, United States

IAC-21.A6.7.9 (confirmed)

SENSIT: A SOFTWARE SUITE FOR OBSERVATION SCHEDULING AND PERFORMANCE ASSESSMENT OF SST SENSOR NETWORKS
Giovanni Purpura, Politecnico di Milano, Italy

▶ IAC-21.A6.7.10 (video)

SPACE DEBRIS OBSERVATION PERFORMANCE RESEARCH OF OPTICAL SATELLITE CONSTELLATION
Gongqiang Li, National Astronomical Observatories, Chinese Academy of Sciences, China

A6.8-E9.1. Political, Legal, Institutional and Economic Aspects of Space Debris Mitigation and Removal - STM Security

October 29 2021, 09:45 — Sheikh Rachid C

Co-Chair(s): David Spencer, The Aerospace Corporation, United States; Serge Plattard, University College London (UCL), United Kingdom; Tanja Masson-Zwaan, International Institute of Air and Space Law, Leiden University, The Netherlands;
Rapporteur(s): Samantha Le May, RMIT University (Royal Melbourne Institute of Technology), Australia;

▶ IAC-21.A6.8-E9.1.1 (video)

ECONOMIC ASPECTS OF SPACE DEBRIS MITIGATION: OECD INPUTS
Marit Undseth, Organisation for Economic Co-operation and Development (OECD), France

IAC-21.A6.8-E9.1.3 (confirmed)

IMPLEMENTING THE SPACE SUSTAINABILITY RATING: AN INNOVATIVE TOOL TO FOSTER LONG-TERM SUSTAINABILITY IN ORBIT
Minoo Rathnasabapathy, Massachusetts Institute of Technology (MIT), United States

IAC-21.A6.8-E9.1.4 (confirmed)

SPACE SUSTAINABILITY: A CLASSIFICATION SYSTEM FOR THE INCENTIVISATION OF SUSTAINABLE SATELLITE DEVELOPMENT AND SPACE OPERATIONS
Eleni Antoniadou, United States

IAC-21.A6.8-E9.1.5 (confirmed)

SPACE DEBRIS RISK GOVERNANCE: PROCEEDINGS FROM A WORKSHOP HELD AT EPFL IN 2021
Emmanuelle David, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

IAC-21.A6.8-E9.1.6 (confirmed)

CHALLENGES IN ACTIVE SPACE DEBRIS REMOVAL: A DISCOURSE NETWORK ANALYSIS UNFOLDING COMPLEX INSTITUTIONAL LOGICS
Xiao-Shan Yap, Utrecht University, Netherlands Antilles

IAC-21.A6.8-E9.1.9 (confirmed)

A POTENTIAL LEGAL BASIS FOR HARVESTING ORBITAL DEBRIS WITHOUT PRIOR CONSENT
George Anthony Long, United States

IAC-21.A6.8-E9.1.10 (confirmed)

GLOBAL SURVEY OF TRENDS IN NATIONAL SPACETRAFFIC MANAGEMENT LEGAL AND POLICYREGIMES
Carissa Christensen, Bryce Space and Technology, United States

IAC-21.A6.8-E9.1.11 (confirmed)

OVERVIEW OF SPACE DEBRIS MITIGATION AND REMOVAL GOVERNMENTAL STRATEGIES AND THEIR IMPACT ON SSA MARKET TRENDS
Charlotte Croison, Euroconsult, France

A6.9. Orbit Determination and Propagation - SST

October 26 2021, 09:45 — Sheikh Rachid C

Co-Chair(s): Christophe Bonnal, Centre National d'Etudes Spatiales (CNES), France; Fabio Santoni, Sapienza University of Rome, Italy;

Rapporteur(s): Juan Carlos Dolado Perez, Centre National d'Etudes Spatiales (CNES), France;

IAC-21.A6.9.1 (confirmed)

ASSESSING ACCURACY OF DIFFERENT ATMOSPHERIC MODELS THROUGH ORBITAL PREDICTIONS FOR NEAR REAL TIME APPLICATIONS

Angel Gallego, GMV Aerospace & Defence SAU, Spain, Spain

IAC-21.A6.9.2 (confirmed)

INVESTIGATING THE IMPACT OF UNMODELLED SOLAR EVENTS ON SATELLITE ORBITS THROUGH REALISTIC SIMULATION SCENARIOS

Filippo Oggioni, Delft University of Technology (TU Delft), The Netherlands

IAC-21.A6.9.3 (confirmed)

AUTOENCODER-BASED THERMOSPHERIC DENSITY ESTIMATION USING GPS TRACKING DATA

Vahid Nateghi, Politecnico di Milano, Italy

IAC-21.A6.9.4 (confirmed)

THE 25-YEAR GUIDELINE: A NEW APPROACH FOR PRACTICE

Hauke Fiedler, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.A6.9.5 (confirmed)

SPACE DOMAIN AWARENESS USING DEEP CONTINUAL LEARNING SEQUENCE PREDICTORS

Mehran Zamani, University of Waterloo, Canada

IAC-21.A6.9.6 (video)

GAUSS-PSO ALGORITHM FOR TOO SHORT ARC INITIAL ORBIT DETERMINATION FOR GROUND SPOT

Gabriele Conforti, Sapienza University of Rome, Italy

IAC-21.A6.9.8 (confirmed)

ORBITAL PROPAGATION CHALLENGES AND SOLUTIONS FOR SST FRAGMENTATION SERVICES

Giorgio Isoletta, University of Naples "Federico II", Italy

IAC-21.A6.9.9 (confirmed)

DETECTION AND CHARACTERISATION OF IN-ORBIT FRAGMENTATIONS OVER SHORT AND LONG PERIODS OF TIME

Andrea Muciaccia, Politecnico di Milano, Italy

IAC-21.A6.9.11 (confirmed)

RESIDENT SPACE OBJECT ORBIT DETERMINATION USING A MULTIRECEIVER RADAR SYSTEM

Marco Felice Montaruli, Politecnico di Milano, Italy

A6.10-B6.5. Joint Space Operations / Space Debris Session – STM Operations

October 29 2021, 13:30 — Sheikh Maktoum B

Co-Chair(s): Darren McKnight, LeoLabs, United States; Helen Tung, , United States; John Auburn, Astroscale Ltd, United Kingdom; Vladimir Agapov, , Russian Federation;

Rapporteur(s): Norman Fitz-Coy, University of Florida, United States; A. Anilkumar, Indian Space Research Organization (ISRO), United States; Andreas Ohndorf, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-21.A6.10-B6.5.1 (confirmed)

ELSA-D: A CASE STUDY OF ADR MISSION OPERATIONAL PRACTICE

Jason Forshaw, Astroscale Ltd, United Kingdom

IAC-21.A6.10-B6.5.2 (video)

SPACECRAFT OPTIMAL MANEUVER STRATEGY FOR QUICK COLLISION AVOIDANCE OF SPACE DEBRIS

Zhen Zhang, Northwestern Polytechnical University; National Key Laboratory of Aerospace Flight Dynamics, China

IAC-21.A6.10-B6.5.3 (confirmed)

SMALL SATELLITE COLLISION RISK MITIGATION USING DIFFERENTIAL DRAG

Nathan Griffith, LeoLabs, United States

IAC-21.A6.10-B6.5.4 (confirmed)

ASSESSMENT OF RULE-BASED OPERATIONS OF MANOEUVERS AVOIDING COLLISIONS BETWEEN ACTIVE SPACECRAFT

Martin Michel, TU Darmstadt, Germany

IAC-21.A6.10-B6.5.5 (confirmed)

COMPUTATIONALLY EFFICIENT APPROACHES FOR LOW-THRUST COLLISION AVOIDANCE ACTIVITIES

Juan Luis Gonzalo, Politecnico di Milano, Italy

IAC-21.A6.10-B6.5.8 (confirmed)

CHALLENGES WITH DATA-FUSION OF MIXED-INPUTS (DOPPLER-SHIFT, PSEUDO-RANGES) BY DISTRIBUTED GROUNDSTATIONS FOR FAST SATELLITE AND OBJECT TRACKING

Andreas Hornig, University of Stuttgart, Germany

IAC-21.A6.10-B6.5.9 (confirmed)

AUTONOMOUS ILLUMINATION PAYLOADS FOR SPACE TRAFFIC MANAGEMENT: THE PLANNED OPERATIONS OF THE LEDSAT DEMONSTRATION MISSION

Paolo Marzioli, Sapienza University of Rome, Italy

A6.IP. Interactive Presentations - 19th IAA SYMPOSIUM ON SPACE DEBRIS

October 28 2021, 13:15 — IP Area

Co-Chair(s): Samantha Le May, RMIT University (Royal Melbourne Institute of Technology), Australia; Fabio Santoni, Sapienza University of Rome, Italy; Roberto Opromolla, University of Naples "Federico II", Italy; Marko Jankovic, DFKI GmbH, Germany; Emma Kerr, Deimos Space UK Ltd, United Kingdom;

Rapporteur(s): Christophe Bonnal, Centre National d'Etudes Spatiales (CNES), France;

IAC-21.A6.IP.1 (video)

REINFORCEMENT LEARNING CONTROL OF SPACE ROBOT WITH ELASTIC BASE, ELASTIC JOINTS AND FLEXIBLE LINKS CAPTURING NON-COOPERATIVE SPACECRAFT

Haiping Ai, Fuzhou University, China

IAC-21.A6.IP.2 (video)

ORBITAL FLIPS DUE TO SOLAR RADIATION PRESSURE FOR ORBITAL DEBRIS IN MEO AND GSO

Eduard Kuznetsov, Ural Federal University, Russian Federation

IAC-21.A6.IP.4 (video)

GROUND TEST OF VISUAL SERVOING FOR HIGH SPEED TUMBLING SPACE DEBRIS CAPTURE AND LESSONS LEARNED

Jing Yuan, National Key Laboratory of Aerospace Flight Dynamic, Northwestern Polytechnical University, China

IAC-21.A6.IP.6 (video)

COLLISION STUDY OF SPACE DEBRIS CAPTURE BY SERVICE SPACECRAFT WITH ROBOTIC ARMS CONNECTED BY FLEXIBLE JOINTS

Ze Zhu, National Key Laboratory of Aerospace Flight Dynamic, Northwestern Polytechnical University, China

IAC-21.A6.IP.9 (confirmed)

CONSTRAINED OPTIMAL COLLISION AVOIDANCE MANOEUVRE ALLOCATION UNDER UNCERTAINTY FOR SUBSEQUENT CONJUNCTION EVENTS

Luis Sanchez, University of Strathclyde, United Kingdom

IAC-21.A6.IP.16 (video)
ION SCV AS A SPACE SURVEILLANCE AND TRACKING INFRASTRUCTURE
Chris Brunskill, D-Orbit SpA, United Kingdom

IAC-21.A6.IP.18 (video)
DESIGN AND ANALYSIS OF NOVEL MECHANICAL DOCKING PORT FOR NON-COOPERATIVE DOCKING AND LIFE EXTENSION OF SMALL SATELLITES.
Amit Chowdhary, University of Surrey, United Kingdom

IAC-21.A6.IP.20 (confirmed)
CONCEPTUAL DESIGN AND FLIGHT SIMULATION OF SMALL SATELLITE PAYLOAD RECOVERY SYSTEM USING AN AUTONOMOUS GUIDED PARAFIL BASED ON COTS
Niki Sajjad, K. N. Toosi University of Technology, Iran

IAC-21.A6.IP.21 (video)
HARDWARE IMPLEMENTATION OF THE SPOT PAYLOAD FOR ORBITING OBJECTS DETECTION USING STAR SENSORS
Mohamed Salim Farissi, Sapienza University of Rome, Italy

IAC-21.A6.IP.22 (confirmed)
ANALYSIS OF POSSIBLE DEFINITIONS OF THE SPACE ENVIRONMENT CAPACITY TO PURSUE LONG-TERM SUSTAINABILITY OF SPACE ACTIVITIES
Mirko Trisolini, Politecnico di Milano, Italy

IAC-21.A6.IP.24 (video)
DESIGN OF AN OPTICAL SPACE-BASED INSTRUMENT FOR A SPACE DEBRIS MONITORING MISSION
Sergio Parra, Graz University of Technology (TU Graz), The Netherlands

A7. IAF SYMPOSIUM ON ONGOING AND NEAR FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS

Coordinator(s): Pietro Ubertini, INAF, Italy; Eric Wille, ESA, The Netherlands;

A7.1. Space Agency Strategies and Plans

October 25 2021, 15:15 — Al Ain A

Co-Chair(s): Eric Wille, ESA, The Netherlands; Pietro Ubertini, INAF, Italy;

Rapporteur(s): Maria Cristina Falvella, Italian Space Agency (ASI), Italy;

IAC-21.A7.1.5 (confirmed)
HEMERA: A EUROPEAN STRATOSPHERIC BALLOON RESEARCH INFRASTRUCTURE
Giulia Mantovani, INAF-IAPS, Italy

A7.2. Science Goals and Drivers for Future Exoplanet, Space Astronomy and Space Physics

October 27 2021, 09:45 — Al Ain A

Co-Chair(s): Pietro Ubertini, INAF, Italy; Maria Cristina Falvella, Italian Space Agency (ASI), Italy;

Rapporteur(s): Eric Wille, ESA, The Netherlands;

IAC-21.A7.2.3 (confirmed)
THE GRASS INSTRUMENT FOR STRATOSPHERIC BALLOON GAMMA-RAY MEASUREMENTS
Angela Bazzano, INAF-IAPS, Italy

IAC-21.A7.2.4 (confirmed)
PROTOTYPE DESIGN OF SCIENCE TRAFFIC SHAPER FOR DEMONSTRATION OF STRATOSPHERE BASED ASTRONOMICAL OBSERVATORY.
Prerna Baranwal, Birla Institute of Technology and Science(BITS), India

Prerna Baranwal, Birla Institute of Technology and Science(BITS), India

IAC-21.A7.2.5 (confirmed)
THE SCIENCE CASE AND CHALLENGES OF SPACEBORNE SUBMILLIMETER INTERFEROMETRY
Leonid Gurvits, The Netherlands

IAC-21.A7.2.6 (confirmed)
OBSERVING GIANT RADIO SOURCES AT 1.4 GHZ
Ilias Fernini, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.A7.2.7 (confirmed)
REVEALING ACCRETION GEOMETRY ON SUPERGIANT HIGH MASS X-RAY BINARIES THROUGH X-RAY WIND TOMOGRAPHY.
Antonios Manousakis, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.A7.2.8 (confirmed)
CORRELATION BETWEEN THE JUPITER-IO OBSERVATIONS AND THE SOLAR RADIO BURSTS USING THE SHARJAH DECA-METRIC RADIO TELESCOPE (SDRT)
Areej Yousef, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.A7.2.9 (confirmed)
MONITORING OF THE SUNSPOTS AND SOLAR RADIO BURSTS FOR THE 25TH SOLAR CYCLE USING THE SHARJAH OBSERVATORIES
Salem Shuhail, University of Sharjah, United Arab Emirates

IAC-21.A7.2.10 (confirmed)
ANALYSIS OF KEPLER AND TESS EXOPLANET TRANSITS USING PYTHON
Asia Bulgarini, Queen Mary University of London, United Kingdom

IAC-21.A7.2.11 (confirmed)
USING L2 LAGRANGE POINT ORBIT TO STUDY VENUS AS AN EXOPLANET
Irina Kovalenko, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, France

IAC-21.A7.2.12 (confirmed)
NUMERICAL SIMULATION OF SOLAR WIND - SATELLITE INTERACTION IN THE SOLAR CORONA REGION
Jorge Alberto Garcia Perez, Department of Engineering, The University of Tokyo, Japan

A7.3. Technology Needs for Future Missions, Systems, and Instruments

October 27 2021, 14:45 — Al Ain A

Co-Chair(s): Eric Wille, ESA, The Netherlands; Maria Cristina Falvella, Italian Space Agency (ASI), Italy;

Rapporteur(s): Pietro Ubertini, INAF, Italy;

IAC-21.A7.3.2 (confirmed)
COMET INTERCEPTOR: A DARING MISSION TO A LONG PERIOD COMET OR AN INTERSTELLAR OBJECT
Mohamed Ramy Elmaarry, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-21.A7.3.4 (confirmed)
HUNTING FOR EXOPLANETS WITH TESS AND BATMAN
Malik Bossett, Northern Arizona University, United States

IAC-21.A7.3.5 (confirmed)
MEASURING THE VARIATION IN THE ORIENTATION OF A SOLID PLANETARY BODY USING LIDAR VIA SATELLITE
Neelabh Menaria, Ramaiah Institute of Technology, India

- IAC-21.A7.3.6 (video)**
ESTIMATION METHOD OF SIGNAL INTENSITY DISTRIBUTION FOR A MULTI-SPACECRAFT RADIO INTERFEROMETER
Masahiro Fujita, University of Tokyo, Japan

IAC-21.A7.3.7 (confirmed)
PERFORMANCE CHARACTERIZATION OF THE LIFE SIGNATURE DETECTION POLARIMETER (LSDPOL)
Mariya Krasteva, Leiden University, The Netherlands

IAC-21.A7.3.8 (confirmed)
OPERATIONAL ORBIT ACQUISITION FOR A LARGE APERTURE DISTRIBUTED SPACE TELESCOPE
Karthick Dharmarajan, University of Rome "La Sapienza", Italy

- IAC-21.A7.3.9 (video)**
A NOVEL METHOD OF ACQUISITION AND TRACKING BETWEEN THE TWIN SPACECRAFT OF "TAIJI-2"
Jianfeng Deng, Shanghai Jiao Tong University, China

IAC-21.A7.3.10 (confirmed)
LAB ON CHIP ABSORPTION PHOTOMETER (LCAP) FOR SOLAR SYSTEM EXPLORATION: DESIGN, ANALYSIS AND TECHNICAL CHALLENGES
Ananyo Bhattacharya, University of Michigan, Ann Arbor, United States

B1. IAF EARTH OBSERVATION SYMPOSIUM

Coordinator(s): Andrew Court, TNO, The Netherlands; Harry Cikaneke, National Oceanic and Atmospheric Administration (NOAA), United States;

B1.1. International Cooperation in Earth Observation Missions

October 25 2021, 15:15 — Abu Dhabi A

Co-Chair(s): Mukund Kadursrinivas Rao, National Institute of Advanced Studies (NIAS), India; José Gavira Izquierdo, European Space Agency (ESA), The Netherlands;

Rapporteur(s): James Graf, Jet Propulsion Laboratory, United States;

IAC-21.B1.1.1 (confirmed)
KEYNOTE: COMMITTEE ON EARTH OBSERVATION SATELLITES (CEOS): 2021 REPORT OF ACTIVITIES TO THE INTERNATIONAL ASTRONAUTICAL CONGRESS
Karen St. Germain, National Aeronautics and Space Administration (NASA), United States

IAC-21.B1.1.4 (confirmed)
APPLICABILITY AND IMPACT OF DIAS AND DIAS-LIKE PLATFORMS ON EUROPEAN AND NON-EUROPEAN MARKETS – LESSONS LEARNED FROM OPERATING CREODIAS BY CLOUDFERRO.
Stanisław Krzyżanowski, Poland

IAC-21.B1.1.5 (confirmed)
SIMULATING GAGARIN'S GAZE: THE CHARM OF A DIGITAL EARTH FOR A SUSTAINABLE PLANET
Federico Monaco, Università degli Studi di Parma, Italy

IAC-21.B1.1.7 (confirmed)
USING REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS TO INCREASE THE RELIABILITY AND ACCURACY OF THE SUSTAINABLE DEVELOPMENT GOALS INDEX TRACKING PLATFORM IN AFRICA: THE CASE STUDY OF ANGOLA.
Marco Filipe Romero, Space Generation Advisory Council (SGAC), Angola

B1.2. Future Earth Observation Systems

October 27 2021, 09:45 — Abu Dhabi A

Co-Chair(s): Timo Stuffer, OHB System AG, Germany; Alain Gleyzes, CNES, France;

Rapporteur(s): Gunter Schreier, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-21.B1.2.2 (confirmed)
IASI-NG PROGRAM DEVELOPMENT STATUS: GENERAL OVERVIEW
Francisco BERMUDO, Centre National d'Etudes Spatiales (CNES), France

IAC-21.B1.2.3 (confirmed)
ANALYSIS OF PSEUDO SATELLITES POTENTIAL IN AFRICA: THE BEST COMPROMISE BETWEEN THE HIGH INVESTMENT IN LARGE SATELLITES, THE CAPACITY BUILDING AND DEMONSTRATION OF THE NANO SATELLITES AND THE ENORMOUS EXPERIENCE AT AVIATION.
Marco Filipe Romero, Space Generation Advisory Council (SGAC), Angola

IAC-21.B1.2.4 (confirmed)
FUTURE EO SYSTEM: THE FIRST VHR CCD CAMERA CONSTELLATION OF 138 MICROSATELLITE
Kammy Brun, China Head Aerospace Technology Co., France

IAC-21.B1.2.5 (confirmed)
C3IEL SATELLITE MISSION: CLUSTER FOR CLOUD EVOLUTION, CLIMATE AND LIGHTNING
Daniel Rosenfeld, The Hebrew University of Jerusalem, Israel

IAC-21.B1.2.6 (confirmed)
MBZ-SAT MISSION GROUND SEGMENT (GS)
Ammar AlMheiri, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.B1.2.7 (confirmed)
NEWSPACE SAR: A GAME CHANGER FOR SPACEBORNE SYNTHETIC APERTURE RADAR
Michelangelo Villano, German Aerospace Center (DLR), Germany

IAC-21.B1.2.8 (confirmed)
THE COPERNICUS EXPANSION HPCM AND OHB CONTRIBUTION - OVERVIEW AND CURRENT STATUS.
Sebastien Tailhades, OHB System, Germany

IAC-21.B1.2.9 (confirmed)
CO3D: A PUBLIC PRIVATE PARTNERSHIP IS THE FOUNDATION OF THE NEXT-GENERATION EO CONSTELLATION FOR FRANCE, DERIVED INFORMATION AND ENHANCED CAPACITIES, AND NOVEL OPTICAL AND RADAR SATELLITE PRODUCTS DESIGNED FOR SMALL CONSTELLATIONS
Delphine Texier, Airbus Defence and Space, France

IAC-21.B1.2.11 (confirmed)
FUTURE EARTH OBSERVATION SYSTEM BASED ON SPACECRAFT WITH SUPER HIGH-RESOLUTION OF 0,35 M.
Mikhail Serov, JSC Glavkosmos, Russian Federation

- IAC-21.B1.2.12 (video)**
THE SATELLITE PRELIMINARY DESIGN OF SELF-ADAPTIVE MAGNETIC RECONNECTION EXPLORER
Zhiming Cai, Innovation Academy for Microsatellites of CAS, China

IAC-21.B1.2.13 (confirmed)
NEW CONCEPT AND TECHNOLOGIES FOR FUTURE EARTH OBSERVATION SYSTEMS IN CONSTELLATION AND DISTRIBUTED
Andrea Rampa, Thales Alenia Space Italia, Italy

B1.3. Earth Observation Sensors and Technology

October 27 2021, 14:45 — Abu Dhabi A

Co-Chair(s): Andrew Court, TNO, The Netherlands; Roland Le Goff, SODERN, France;

Rapporteur(s): Kate Becker, National Oceanic and Atmospheric Administration (NOAA), United States;

IAC-21.B1.3.4 (confirmed)

ABSOLUTE RADIOMETRIC REFERENCE INSTRUMENT (ARRI)
Gerard Otter, TNO, The Netherlands

IAC-21.B1.3.5 (confirmed)

EAGLEEYE TELESCOPE FOR VLEO APPLICATIONS
Mikolaj Podgorski, Scanway sp. z o.o., Poland

IAC-21.B1.3.6 (confirmed)

SMALL SATELLITES POTENTIAL FOR GREENHOUSE GAS AND CO₂ MONITORING
Daria Stepanova, German Orbital Systems GmbH, Germany

IAC-21.B1.3.9 (confirmed)

SMALL SATELLITE L BAND SAR SYSTEM AS A CONSTELLATION BUILDING BLOCK
Kevin Gema, Dragonfly Aerospace, South Africa

IAC-21.B1.3.11 (video)

STATUS UPDATE FOR THE GNSS REFLECTOMETRY MISSION OF TRITON SATELLITE IN TAIWAN
Yung-Fu Tsai, National Space Organization, Taipei

IAC-21.B1.3.14 (confirmed)

SARSAT ARABIA: EARTH OBSERVATION CONSTELLATION FOR THE MENA REGION
Amru Alamoudi, SARsat Arabia, Saudi Arabia

B1.4. Earth Observation Data Management Systems

October 28 2021, 09:45 — Abu Dhabi A

Co-Chair(s): Gunter Schreier, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; James Graf, Jet Propulsion Laboratory, United States;

Rapporteur(s): Annamaria Nassisi, Thales Alenia Space Italia, Italy;

IAC-21.B1.4.1 (confirmed)

TIME SERIES MONITORING OF THE 2020 MAURITIUS OIL SPILL WITH SYNTHETIC APERTURE RADAR SATELLITE IMAGERY
Kenichi Sasaki, University of Colorado Boulder, United States

IAC-21.B1.4.4 (confirmed)

MACHINE LEARNING IN EARTH OBSERVATION OPERATIONS: A REVIEW
Pablo Miralles, GTD, France

IAC-21.B1.4.6 (confirmed)

GPU-ACCELERATED SIMULATION OF SPATIAL AND SPECTRAL STRAY-LIGHT EFFECTS ON SATELLITE HYPERSPECTRAL IMAGERS
Jaime Parra, Deimos Space SLU, Spain

IAC-21.B1.4.7 (confirmed)

MULTI-SPECTRAL MISSIONS DATA INTER-CALIBRATION AND CO-REGISTRATION AS-A-SERVICE
Leonardo Amoruso, Planetek Hellas epe, Italy

IAC-21.B1.4.8 (confirmed)

MULTIPLE-IMAGE SUPER-RESOLUTION RECONSTRUCTION USING DEEP LEARNING: A SENTINEL-2 CASE STUDY
Michal Kawulok, Silesian University of Technology, Poland

IAC-21.B1.4.10 (confirmed)

OVERCOMING THE CHALLENGES OF AUTOMATIC OBJECT RECOGNITION IN SATELLITE GEOSPATIAL DATA
Roe Penso, IAI MBT Space, Israel

IAC-21.B1.4.12 (confirmed)

HIGH-RESOLUTION TROPOSPHERIC REFRACTIVITY FIELDS BY COMBINING MACHINE LEARNING AND COLLOCATION METHODS TO CORRECT EARTH OBSERVATION DATA
Endrit Shehaj, ETHZ, Switzerland

B1.5. Earth Observation Applications, Societal Challenges and Economic Benefits

October 28 2021, 14:45 — Abu Dhabi A

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;
Rapporteur(s): Wolfgang Rathgeber, European Space Agency (ESA), France; Annamaria Nassisi, Thales Alenia Space Italia, Italy;

IAC-21.B1.5.3 (confirmed)

SOCIAL BENEFITS ASSESSMENT OF EARTH OBSERVATION MISSIONS THROUGH THE SDG2030
Marco Nugnes, Politecnico di Milano, Italy

IAC-21.B1.5.4 (confirmed)

NIGHT IMAGE & VIDEO CONSTELLATION: NEW APPLICATIONS BRINGING SOCIAL ECONOMIC BENEFITS FROM SPACE
Kammy Brun, China Head Aerospace Technology Co., France

IAC-21.B1.5.5 (confirmed)

AN EARTH IMAGING CUBESAT AS A DISASTER RELIEF TOOL FOR AMATEUR RADIO OPERATORS
Kevin Burville, Simon Fraser University, Canada

IAC-21.B1.5.6 (confirmed)

IMPLICATION OF SURPLUS AND SHORTAGE OF WATER ON THE AFRICAN SOIL BETWEEN 1980 - 2020; A CASE STUDY OF ALGERIA, ANGOLA AND ZIMBABWE
Alina Vizireanu, Space Generation Advisory Council (SGAC), United Kingdom

IAC-21.B1.5.7 (confirmed)

EARTH OBSERVATION AND IN-SITU DATA TO INFORM UNDERSTANDING OF WATER HYACINTH GROWTH ON LAKE NOKOUÉ IN BENIN
Ufuoma Oviemhada, Massachusetts Institute of Technology (MIT), United States

IAC-21.B1.5.8 (confirmed)

ACCESSIBLE DECISION SUPPORT SYSTEMS UTILIZING THE ENVIRONMENT-VULNERABILITY-DECISION-TECHNOLOGY MODELING FRAMEWORK
Seamus Lombardo, Massachusetts Institute of Technology (MIT), United States

IAC-21.B1.5.9 (confirmed)

INTEGRATING SOCIAL MEDIA AND REMOTE SENSING DATA FOR FLOOD ASSESSMENT IN DEVELOPING COUNTRIES: A CASE STUDY IN DOUALA ESTUARY, CAMEROON
Desire Muhire, Space Generation Advisory Council (SGAC), France

IAC-21.B1.5.10 (confirmed)

SUPPLEMENTING EARTH OBSERVATION WITH TWITTER DATA TO IMPROVE DISASTER ASSESSMENTS: A CASE STUDY OF 2020 BOBCAT FIRE IN SOUTHERN CALIFORNIA
Swarnajyoti Mukherjee, GP Advanced Projects, Srl, Italy

IAC-21.B1.5.12 (video)

THE ITALIAN EO MISSIONS FOR ENVIRONMENTAL PROTECTION, NATURAL AND ANTHROPIC RISK MANAGEMENT
Fabrizio Lenti, Agenzia Spaziale Italiana (ASI), Italy

IAC-21.B1.5.13 (confirmed)

WAKE-BASED DETECTION OF DARK SHIPS IN SAR IMAGES FOR IMPROVING SECURITY OF SEAS
Maria Daniela Graziano, University of Naples "Federico II", Italy

IAC-21.B1.5.15 (confirmed)

A 6TH GYRE: REMOTE TRACKING OF ARCTIC OCEAN PLASTICS
Samee Rousseau, International Space University (ISU), France

B1.6. 21st Anniversary of the Disaster Charter: History, Status and Future of this Powerful and Productive International Cooperation

October 29 2021, 09:45 — Dubai D

Co-Chair(s): Harry A. Cikane, National Oceanic and Atmospheric Administration (NOAA), United States; Elizabeth Seward, Airbus Defence and Space Ltd, United Kingdom;

Rapporteur(s): Charles Wooldridge, National Oceanic and Atmospheric Administration (NOAA), United States;

IAC-21.B1.6.2 (confirmed)

TWO DECADES OF THE DISASTER CHARTER: REFLECTING ON RELEVANT LEGAL ISSUES AND POLICIES FOR THE FUTURE
Dimitra Stefoudi, Leiden University, The Netherlands

IAC-21.B1.6.3 (confirmed)

THE UTILITY OF SATELLITE IMAGERY DURING THE 2010 DEEPWATER HORIZON OIL SPILL
Albert DeGarmo, NOAA, United States

IAC-21.B1.6.7 (confirmed)

ACTIVATION OF THE INTERNATIONAL CHARTER FOR MAJOR DISASTERS THROUGH THE UNIVERSAL ACCESS
Pierric Ferrier, Centre National d'Etudes Spatiales (CNES), France

IAC-21.B1.6.8 (confirmed)

UNOOSA/UN-SPIDER: FACILITATING THE LINK BETWEEN THE CHARTER AND THE DISASTER MANAGEMENT COMMUNITY
Juan Carlos VILLAGRAN DE LEON, The United Nations Office for Outer Space Affairs (UNOOSA), Germany

IAC-21.B1.6.9 (confirmed)

CHARTER TOOLS TO SUPPORT CALL MANAGEMENT AND INFORMATION DELIVERY
Robert Biasutti, ESA - European Space Agency, Italy

IAC-21.B1.6.10 (confirmed)

ROSCOSMOS AND THE CHARTER COOPERATION
Andrey Kuklin, Federal Space Agency (ROSCOSMOS), Russian Federation

IAC-21.B1.6.11 (confirmed)

INTERNATIONAL CHARTER: A CANADIAN PERSPECTIVE
Guennadi Kroupnik, Canadian Space Agency, Canada

B1.IP. Interactive Presentations - IAF EARTH OBSERVATION SYMPOSIUM

October 28 2021, 13:15 — IP Area

Co-Chair(s): Andrew Court, TNO, The Netherlands; Harry A. Cikane, National Oceanic and Atmospheric Administration (NOAA), United States;

IAC-21.B1.IP.8 (confirmed)

MISSION ANALYSIS AND TRADE-OFF STUDY FOR AURORAL OVAL OBSERVATION MISSION UTILIZING CUBESATS FOR SPACE WEATHER MONITORING
Lisa Drudi, European Space Agency (ESA-ESOC), Canada

IAC-21.B1.IP.10 (confirmed)

DEVELOPMENT OF A COMPLETE TOOLBOX FOR VALIDATION ACTIVITIES OF DMSAT-1 USING PYTHON AND PYQT
Haritha Harikrishnan, University of Dubai, United Arab Emirates

IAC-21.B1.IP.12 (confirmed)

EARTH OBSERVATION FOR ARCTIC OCEAN PLASTIC DEBRIS
Giulia Costella, International Space University (ISU), France

IAC-21.B1.IP.14 (confirmed)

SPACECRAFT PAYLOAD FOR LOW-ORBIT CONSTELLATIONS FOR REMOTE SENSING CO2 AND CH4
Oleg Mansurov, Russian Federation

IAC-21.B1.IP.17 (confirmed)

EFFECTS OF AFRICAN DUST EVENTS ON SEA SURFACE TEMPERATURE PATTERNS IN PUERTO RICO USING EARTH OBSERVATION DATA AND GROUND BASE STATIONS
Edgar Perez-Matias, University of Puerto Rico, Puerto Rico

IAC-21.B1.IP.21 (confirmed)

WIDE SWATH LENS OPTICAL PAYLOAD BASED ON A MODIFIED PETZVAL SYSTEM
Vladislav Nahorniy, Dragonfly Aerospace, Ukraine

B2. IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM

Coordinator(s): Manfred Wittig, European Space Agency (ESA), The Netherlands; Rita Lollock, The Aerospace Corporation, United States;

B2.1. Advances in Space-based Communication Systems and Services, Part 1

October 26 2021, 09:45 — Al Ain F

Co-Chair(s): Laszlo Bacsardi, Budapest University of Technology and Economics, Hungary; Eva Maria Aicher, HENSOLDT Sensors GmbH, Germany;

▶ IAC-21.B2.1.1 (video)

DESIGNING A 3GPP NB-IOT NTN SERVICE FOR CUBESATS IN LOW DENSITY CONSTELLATIONS
Marco Guadalupi, Sateliot, Spain

▶ IAC-21.B2.1.2 (video)

SECURE EMBB SERVICE DELIVERY OVER 5G NR NON-TERRESTRIAL NETWORKS
Federica Rinaldi, University Mediterranea of Reggio Calabria, Italy

IAC-21.B2.1.4 (confirmed)

RURAL CONNECTIVITY IN DEVELOPING NATIONS: A TECHNICAL COMPARISON OF GEO VHTS AND LEO MEGACONSTELLATIONS
Alan Mattos, Agencia Boliviana Espacial, Bolivia

IAC-21.B2.1.5 (confirmed)

ON THE DESIGN OF A MODULAR MINIATURIZED SATELLITE COMMUNICATION SYSTEM FOR LOW EARTH ORBIT APPLICATIONS
Mariam Al Darmaki, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.B2.1.6 (confirmed)

ADVANCED SPACE-BASED INTERNET-OF-THINGS (IOT) CONSTELLATION BRINGING HIGH REVISIT & LOW LATENCY COMMUNICATION SERVICES
Kammy Brun, China Head Aerospace Technology Co., France

IAC-21.B2.1.7 (confirmed)

ITCAN: A 3U CUBESAT FOR REAL-TIME IN ORBIT FUNCTIONAL TESTS
Sara Pourdarai, Iran

IAC-21.B2.1.9 (confirmed)

SATELLITE COMMUNICATION FOR IIOT
Florian Zeiger, Siemens AG, Germany

▶ IAC-21.B2.1.10 (video)

DESIGN AND DEVELOPMENT OF A HIGH-SPEED COMMUNICATION SYSTEM FOR A LEO NANO SATELLITE
Shayan Majumder, Birla Institute of Technology and Science (BITS), India

IAC-21.B2.1.11 (confirmed)

DEVELOPMENT OF A SUPPORT SYSTEM FOR THE TELEVISION MIGRATION PLAN FROM ANALOGUE TO DIGITAL IN ANGOLAN TERRITORY
Pedro Ngombo Lunguieki, Angola

B2.2. Advances in Space-based Communication Systems and Services, Part 2

October 26 2021, 14:45 — Al Ain F

Co-Chair(s): Laszlo Bacsardi, Budapest University of Technology and Economics, Hungary; Dunay Badirkhanov, Space Agency of Republic of Azerbaijan (Azercosmos), Azerbaijan;

IAC-21.B2.2.1 (confirmed)
INTERNET IN SPACE! DEVELOPING EUROPEAN CAPABILITIES: PUSHING FOR THE NEXT GENERATION OF OPTICAL TELECOMMUNICATION TECHNOLOGIES
Christopher Vasko, European Space Agency (ESA), The Netherlands

- IAC-21.B2.2.2 (video)**
DEVELOPMENT STATUS FOR SUB-SYSTEM ASSEMBLY AND INTEGRATION TEST ON ENGINEERING TEST SATELLITE 9 HIGH-SPEED LASER COMMUNICATIONS MISSION, "HICALI"
Yasushi MUNEMASA, National Institute of Information and Communications Technology (NICT), Japan

IAC-21.B2.2.3 (confirmed)
DESIGN OF MOON TO EARTH OPTICAL TRUNK DATALINK FOR 400 MBPS
Martijn Dresscher, TNO, The Netherlands

- IAC-21.B2.2.4 (video)**
DEVELOPMENT OF A MINIATURIZED LASER-COMMUNICATION TERMINAL FOR SMALL SATELLITES
Alberto Carrasco-Casado, National Institute of Information and Communications Technology (NICT), Japan

- IAC-21.B2.2.5 (video)**
LINK BUDGET ANALYSIS OF VARIOUS LINK SCENARIOS FOR ADAPTIVE OPTICAL SATELLITE NETWORK
Hideaki Kotake, National Institute of Information and Communications Technology (NICT), Japan

IAC-21.B2.2.6 (confirmed)
FIRST OPTICAL GROUND STATION INTEGRATED IN A SERVICE PROVIDER NETWORK

IAC-21.B2.2.7 (confirmed)
SPACE BASED HYBRID EDGE CLOUD ARCHITECTURES
Markus Sauer, Siemens AG, Germany

- IAC-21.B2.2.8 (video)**
DEMONSTRATION USING CESSNA AIRCRAFT OF ACTIVE ELECTRONICALLY STEERED ARRAY ANTENNA FOR SATELLITE COMMUNICATIONS
Takuya Okura, National Institute of Information and Communications Technology (NICT), Japan

IAC-21.B2.2.11 (confirmed)
ADVANTAGES OF INTER-SATELLITE CONNECTIVITY FOR EARTH OBSERVATION CONSTELLATIONS DEDICATED TO DISASTER RESPONSE
Andrea Vettor, Italy

B2.3. Advances in Space-based Communication Systems and Services, Part 3

October 27 2021, 09:45 — Al Ain F

Co-Chair(s): Dunay Badirkhanov, Space Agency of Republic of Azerbaijan (Azercosmos), Azerbaijan; Sara AlMaeni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates;

IAC-21.B2.3.1 (confirmed)
DISRUPTIVE, COST-EFFECTIVE, FAST DEPLOYMENT LASER-BASED LUNAR TELECOMMUNICATION NETWORK BASED ON NOVEL SMALL SATELLITE TECHNOLOGIES.
Matias Campos, SIDERALIS Foundation, Ecuador

IAC-21.B2.3.3 (confirmed)
NEW TECHNOLOGY INNOVATIONS FOR THE FRONTIER RADIO FROM THE EMIRATES MARS MISSION, EUROPA CLIPPER, DART, AND MORE
Michael O'Neill, Johns Hopkins University Applied Physics Laboratory, United States

- IAC-21.B2.3.4 (video)**
DESIGNING THE RADIO LINK FOR A LUNAR CUBESAT: THE LUMIO CASE
Stefano Speretta, Delft University of Technology (TU Delft), The Netherlands

IAC-21.B2.3.6 (confirmed)
THE PRETTY CUBESAT SYSTEM REDUNDANCY CONCEPT
Andreas Johann Hörmer, Graz University of Technology (TU Graz), Austria

IAC-21.B2.3.11 (confirmed)
COMPUTATIONAL APPROACHES FOR SATELLITE SYSTEMS USING NON-GEOSTATIONARY ORBIT IN RADIO INTERFERENCE ANALYSIS
Timur Kadyrov, International Telecommunication Union (ITU), Switzerland

B2.4. Advances in Space-based Communication Technologies, Part 1

October 27 2021, 14:45 — Al Ain F

Co-Chair(s): Sara AlMaeni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates; Debra Emmons, The Aerospace Corporation, United States;

- IAC-21.B2.4.1 (video)**
COMMUNICATION SYSTEM OF MULTIPLE DEPLOYABLE PAYLOADS WITH RANGE MEASUREMENT CAPABILITY
Tetsuo Yoshimitsu, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

- IAC-21.B2.4.3 (video)**
CHALLENGES OF OPTICAL AND MMWAVE/RF COMMUNICATION LINKS FOR NANOSATELLITE MISSIONS
Visweswaran Karunanithi, Technical University of Delft/Innovative Solutions In Space.BV, Delft, The Netherlands

IAC-21.B2.4.4 (confirmed)
COMMUNICATION SYSTEM ARCHITECTURE AND FIRMWARE DESIGN FOR NANO SATELLITES
Tushar Tandon, Julius Maximilians Universität Würzburg, Germany

IAC-21.B2.4.5 (confirmed)
PHLEXSAT - A NOVEL PHOTO-DIGITAL COMMUNICATION PAYLOAD FOR VERY HIGH THROUGHPUT SATELLITES
Madhubrata Chatterjee, MDA, United Kingdom

- IAC-21.B2.4.6 (video)**
CAST ALL ELECTRIC PROPULSION SATELLITE PLATFORM DEVELOPMENT AND INNOVATION
Min Wang, China Academy of Space Technology (CAST), China

- IAC-21.B2.4.11 (video)**
A MODULATION RECOGNITION METHOD FOR OFDM BASED ON COMPRESSED SENSING
Yang Yao, University of Electronic Science and Technology of China (UESTC), China

- IAC-21.B2.4.12 (video)**
TESTING AND IMPLEMENTATION OF COMMUNICATION SUBSYSTEM OF A 3U CUBESAT USING SOFTWARE-DEFINED RADIO
Hrishi Tambi, Birla Institute of Technology and Science (BITS), India

- IAC-21.B2.4.14 (video)**
ACHIEVEMENT OF ON-ORBIT WIRELESS LAN DEMONSTRATION FOR DOCKING VIDEO TRANSFER
Yuri Hachiya, Japan Aerospace Exploration Agency (JAXA), Japan

B2.5. Advances in Space-based Communication Technologies, Part 2

October 28 2021, 09:45 — Al Ain F

Co-Chair(s): Debra Emmons, The Aerospace Corporation, United States; Giovanni B. Palmerini, Sapienza University of Rome, Italy;

IAC-21.B2.5.1 (confirmed)
ADVANCEMENTS IN PLASMA ANTENNAS FOR SATCOM NAVIGATION SYSTEMS

Paola De Carlo, University of Padova, Italy

IAC-21.B2.5.2 (confirmed)
DATASAT – ADA GROUND STATION NETWORK. AUTOMATIC DIRECTIONAL ANTENNA FOR SPACE COMMUNICATIONS ON LEO SPACECRAFTS

SERGIO SOARES, Brazil

IAC-21.B2.5.3 (confirmed)
AN ULTRA-LOW PROFILE HIGH-GAIN ANTENNA POINTING MECHANISM FOR MICRO LUNAR ROVER PLATFORMS

Sam Bunka, University of British Columbia, Canada

IAC-21.B2.5.6 (confirmed)
OPTICAL COMMUNICATION SYSTEMS FOR MICRO- AND NANO-SATELLITE APPLICATIONS: CURRENT STATUS AND FUTURE TRENDS

Kenny Wu Chik, University Wuerzburg, Germany

IAC-21.B2.5.7 (confirmed)
TEST RESULTS OF ADVANCED COMMUNICATIONS SOLUTIONS FOR THE NEXT GENERATION OF EARTH OBSERVATION SATELLITES

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

IAC-21.B2.5.8 (confirmed)
DEVELOPMENTS OF KEY TECHNOLOGIES FOR ISRO'S SATELLITE BASED QUANTUM COMMUNICATION PROGRAM

Adarsh Jain, Space Applications Centre (ISRO), India

IAC-21.B2.5.10 (video)
NOVEL COMMUNICATION METHODOLOGY FOR RADIO INTERFEROMETER SYSTEM WITH FREE-TO-JOIN-AND-LEAVE SPACECRAFTS

Yuichiro Nada, University of Tokyo, Japan

B2.6. Advances in Space-based Navigation Systems, Services, and Applications

October 28 2021, 14:45 — Al Ain F

Co-Chair(s): Kristian Pauly, OHB System, Germany; Giovanni B. Palmerini, Sapienza University of Rome, Italy;

IAC-21.B2.6.2 (confirmed)
PERFORMANCE ANALYSIS OF A MARTIAN POLAR NAVIGATION SYSTEM

Serena Molli, Sapienza University of Rome, Italy

IAC-21.B2.6.5 (confirmed)
MOONLIGHT NAVIGATION SERVICE - HOW TO LAND ON PEAKS OF ETERNAL LIGHT

Pietro Giordano, ESA - European Space Agency, The Netherlands

IAC-21.B2.6.6 (confirmed)
ANALYSIS OF A SMALL-SATELLITE CONSTELLATION FOR LUNAR NAVIGATION CAPABILITIES

Angel Arcia Gil, Space Generation Advisory Council (SGAC), Panama

IAC-21.B2.6.7 (confirmed)
INTEGRATED GROUND GRAVITY AND NAVIGATION RTK NETWORK.

Sergiy Matviyenko, JSC "RPC "KURS", Ukraine

IAC-21.B2.6.8 (confirmed)
A-POSTERIORI PRIVACY-PRESERVING TRACING MECHANISM EXPLOITING SATELLITES TO PREVENT FRAUDULENT POSITIONING

Antonia Russo, University Mediterranea of Reggio Calabria, Italy

IAC-21.B2.6.9 (confirmed)
STUDYING MULTIPATH ERROR IN ISRO'S NAVIC SATELLITE SIGNALS

Kartik Tiwari, India

IAC-21.B2.6.11 (confirmed)
REGIONAL IONOSPHERIC RANGE ERRORS – A COMPARISON BETWEEN SHARJAH AND BAHRAIN REGIONS

Sahar Sowdagar, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.B2.6.12 (confirmed)
UNIVERSAL POSITIONING SYSTEM-THE FUTURE OF SPACE NAVIGATION

Nithyaashree Giridharan, R V College of Engineering, Bengaluru, India

B2.7. Advances in Space-based Navigation Technologies

October 29 2021, 13:30 — Al Ain F

Co-Chair(s): Kristian Pauly, OHB System, Germany; Peter Buist, European GNSS Agency (GSA), The Netherlands;

IAC-21.B2.7.2 (confirmed)
ORBIT DETERMINATION AND TIME SYNCHRONISATION IN LUNAR ORBIT WITH GNSS - LUNAR PATHFINDER EXPERIMENT

Pietro Giordano, ESA - European Space Agency, The Netherlands

IAC-21.B2.7.4 (video)
DYNAMIC RECURSIVE OPTIMIZATION FOR OPTICAL NAVIGATION FEATURE SELECTION IN ASTEROID LANDING

Wenbo Xiu, Beijing Institute of Technology (BIT), China

IAC-21.B2.7.5 (confirmed)
CRATER-BASED AUTONOMOUS POSITION ESTIMATION IN PLANETARY MISSIONS BY DEEP LEARNING

Roberto Del Prete, Università degli Studi di Napoli "Federico II", Italy

IAC-21.B2.7.6 (video)
PARALLEL STATE ESTIMATION UNDER FLEXIBLE CONNECTIONS IN SMALL CELESTIAL BODY LANDINGS

Dantong Ge, Beijing Institute of Technology, China

IAC-21.B2.7.8 (confirmed)
SOFTWARE-DEFINED MULTI-LATERATION TRACKING FOR NEAR-SPACE, SUBORBITAL AND SPACE VEHICLES: DEVELOPMENT OF THE STRAINS EXPERIMENT

Niccolò Picci, Sapienza University of Rome, Italy

IAC-21.B2.7.9 (video)
WHOLE MTO ORBIT SELF-ADAPTIVE TRACKING METHOD BASED ON FPGA RESOURCE RESTRICTED PLATFORM

Jia Tian, China Academy of Space Technology (Xi'an), China

B2.8-GTS.3. Space Communications and Navigation Global Technical Session

October 25 2021, 15:15 — Dubai D

Co-Chair(s): Peter Buist, European GNSS Agency (GSA), The Netherlands; Stephanie Wan, Space Generation Advisory Council (SGAC), United States;

IAC-21.B2.8-GTS.3.2 (confirmed)
STATISTICAL TESTING TOOLS FOR QUANTUM RANDOM NUMBER GENERATORS ONBOARD CUBESATS.

Balazs Solymos, Budapest University of Technology and Economics, Hungary

IAC-21.B2.8-GTS.3.4 (confirmed)
LASER COMMUNICATION IN SPACE - STATUS AND APPLICATIONS

Matthias Motzigemba, Tesat-Spacecom GmbH & Co. KG, Germany

IAC-21.B2.8-GTS.3.6 (video)
QUANTITATIVE EVALUATION METHOD OF NAVIGATION SATELLITE IN-ORBIT TEST BASED ON FUZZY METHOD

Dong Yang, Beijing Institute of Spacecraft System Engineering, China Academy of Space Technology (CAST), China

B2.IP. Interactive Presentations - IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM

October 28 2021, 13:15 — IP Area

Co-Chair(s): Stephanie Wan, Space Generation Advisory Council (SGAC), United States; Eva Maria Aicher, HENSOLDT Sensors GmbH, Germany;

IAC-21.B2.IP.1 (confirmed)
DESIGN AND ANALYSIS OF SURFACE COMMUNICATION SYSTEM FOR THE EMIRATES LUNAR MISSION

Sara AlMaeeni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.B2.IP.2 (confirmed)
A MOBILE COST-EFFECTIVE SATELLITE GROUND STATION TO RECEIVE WEATHER IMAGES IN REMOTE COMMUNITIES

Alex Jurgutis, Faculty of Engineering, Carleton University, Canada

IAC-21.B2.IP.6 (confirmed)
DESIGN APPROACH TO QUANTIFY INTER-GROUND STATION DISTANCES BY DOPPLER BASED RANGING EXPERIMENT FOR SMALL SATELLITE MISSIONS

Aditya Savio Paul, University of Tartu, Estonia

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 Programmes (Overview)

October 25 2021, 15:15 — Sheikh Maktoum B

Co-Chair(s): Sam Scimemi, National Aeronautics and Space Administration (NASA), United States; Juergen Schlutz, European Space Agency (ESA), Germany;

Rapporteur(s): Rainer Willnecker, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-21.B3.1.2 (confirmed)
KEYNOTE: HUMAN SPACEFLIGHT WITHIN ESA'S SPACE EXPLORATION PROGRAMME FOR THE NEXT DECADE

David Parker, European Space Agency (ESA/ESTEC), The Netherlands

IAC-21.B3.1.3 (confirmed)
JAXA'S INITIATIVE ON HUMAN SPACEFLIGHT PROGRAM FOR ISS AND INTERNATIONAL SPACE EXPLORATION

Hiroshi Sasaki, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-21.B3.1.4 (confirmed)
CREW COMMUNICATION SYSTEM FOR GAGANYAAN

ANURAG VERMA, Indian Space Research Organization (ISRO), India

IAC-21.B3.1.5 (confirmed)
GENDER PARITY AND PARASTRonauts: ANTICIPATING TRENDS FOR THE 2021 ESA ASTRONAUT SELECTION CRITERIA WITH ANALOG MISSION STUDIES

Leszek Orzechowski, Space is More, Poland

IAC-21.B3.1.6 (confirmed)
BACK TO STAY: NASA'S CAMPAIGN TO SUSTAINABLY RETURN HUMANS TO THE MOON

Tara Rutley, National Aeronautics and Space Administration (NASA), United States

B3.2. Commercial Human Spaceflight Programmes

October 26 2021, 09:45 — Sheikh Maktoum B

Co-Chair(s): Sergey K. Shaevich, Khronichiev State Research & Production Space Center, Russian Federation; Michael W. Hawes, Lockheed Martin Corporation, United States; Michael E. Lopez Alegria, MLA Space, LLC, United States;

IAC-21.B3.2.2 (confirmed)
PROTOTYPE PLANS FOR VARIOUS COMMERCIAL SPACECRAFT TRAINING SIMULATORS

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.B3.2.3 (confirmed)
PROBLEMS AND SOLUTIONS THAT ARE PREVENTING MORE WOMEN FROM BECOMING SPACE TOURISTS

Taiko Kawakami, ASTRAX, Inc., Japan

IAC-21.B3.2.4 (confirmed)
ITALIAN ROLE IN THE COMMERCIAL UTILIZATION AND SERVICES OF LEO INTERNATIONAL SPACE STATION

Annamaria Piras, Thales Alenia Space Italia, Italy

IAC-21.B3.2.5 (confirmed)
OUTLINE OF ASTRAX PRIVATE SPACE BUSINESS CREATION EDUCATION AND TRAINING CENTER

Taichi Yamazaki, ASTRAX, Inc., Japan

B3.3. Utilization & Exploitation of Human Spaceflight Systems

October 26 2021, 14:45 — Sheikh Maktoum B

Co-Chair(s): Cristian Bank, EUMETSAT, Germany; Eleanor Morgan, Lockheed Martin Space Systems, United States;

IAC-21.B3.3.1 (confirmed)
THE NEXT DECADE OF THE INTERNATIONAL SPACE STATION PARTNERSHIP

Robyn Gatens, NASA, United States

IAC-21.B3.3.2 (confirmed)
NOVEL WAYS TO USE THE INTERNATIONAL SPACE STATION AS AN EXPLORATION ANALOG: INTERNATIONAL PROGRESS IN PLANNING "ISS4MARS"

Julie A. Robinson, National Aeronautics and Space Administration (NASA), United States

IAC-21.B3.3.3 (confirmed)
RESEARCH POTENTIAL OF THE ISS'S NAUKA MODULE

Igor V. Sorokin, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation

IAC-21.B3.3.5 (confirmed)
POSSIBILITIES FOR JOINT INTERNATIONAL MODULES

Matthew Duggan, The Boeing Company, United States

IAC-21.B3.3.7 (confirmed)
FIRST RESULTS FROM THE GERMAN-RUSSIAN ICARUS SYSTEM FOR ANIMAL TRACKING FROM ISS

Johannes Wepler, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

B3.4-B6.4. Flight & Ground Operations aspects of Human Spaceflight - Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia

October 27 2021, 09:45 — Sheikh Maktoum B

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 A/S, Denmark; Mario Cardano, Thales Alenia Space France, Italy;

IAC-21.B3.4-B6.4.1 (confirmed)

PARRYING OF CONTINGENCY IN FAST RENDEZVOUS WITH ISS
Rafail Murtazin, Rocket Space Corporation Energia, Russian Federation

IAC-21.B3.4-B6.4.2 (video)

IMPACT 1.0--TASK IMPAIRMENT: A NOVEL APPROACH FOR ASSESSING IMPAIRMENT DURING EXPLORATION-CLASS MISSIONS
William Fernandez, NASA, United States

IAC-21.B3.4-B6.4.5 (confirmed)

ASINET: THE ITALIAN SPACE AGENCY INFRASTRUCTURE FOR ISS DATA UTILIZATION
Gabriele Mascetti, Italian Space Agency (ASI), Italy

IAC-21.B3.4-B6.4.6 (video)

DESIGN OF GROUND SUPPORT SYSTEM FOR CHINA SPACE STATION ORBITAL FLIGHT
Peng Ying, China Academy of Space Technology (CAST), China

IAC-21.B3.4-B6.4.7 (confirmed)

SPACE CLOUD AS SERVICE : THE NEW SERVICES IN THE NEW SPACE FOR THE MISSIONS
Jamel Metmati, THALES Services, France

IAC-21.B3.4-B6.4.9 (confirmed)

FIRST EXPERIENCE WITH COLUMBUS DMS MODERNIZATION, COL KA OPERATIONS AND IP-BASED COMMUNICATION
Florian Bender, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.B3.4-B6.4.11 (confirmed)

STUDYING THE DRIFT OF A CALIBRATED SOLID INSIDE THE PRESSURIZED CABIN OF THE INTERNATIONAL SPACE STATION
Michail Yu. Belyaev, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation

IAC-21.B3.4-B6.4.12 (video)

THE PATH TO CREW AUTONOMY - SITUATIONAL AWARENESS IN SCHEDULING AND RESCHEDULING TASKS FOR NOVICE SCHEDULERS
Megan Shyr, University of California, Davis, United States

B3.5. Astronaut Training, Accommodation, and Operations in Space

October 27 2021, 14:45 — Sheikh Maktoum B

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-21.B3.5.1 (confirmed)

THE EVOLUTION AND INNOVATION OF THE ASTRONAUT SELECTION PROCESS OVER TIME
Mrityunjai Verma, Space Generation Advisory Council (SGAC), India

IAC-21.B3.5.2 (confirmed)

MULTI-SEGMENT COSMONAUT TRAINING TECHNOLOGY
Oleg Skripochka, Gagarin Cosmonaut Training Center, Russian Federation

IAC-21.B3.5.3 (confirmed)

ASTRONAUT TRAINING ON-BOARD THE INTERNATIONAL SPACE STATION USING A STANDALONE VIRTUAL REALITY HEADSET
Stephen Ennis, DLR (German Aerospace Center), Germany

IAC-21.B3.5.6 (confirmed)

THE COMMERCIAL ASTRONAUTS IN THE NEW SPACE : TRAINING AND REQUIREMENTS
Jamel Metmati, THALES Services, France

IAC-21.B3.5.7 (confirmed)

EXOSUIT: A TRAINING SYSTEM FOR FUTURE ASTRONAUTS BASED ON AN EXOSKELETON AND MIXED REALITY
Andrés Martín-Barrio, Space Applications Services N.V./S.A, Belgium

B3.6-A5.3. Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia

October 28 2021, 09:45 — Sheikh Maktoum B

Co-Chair(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Mark Hempell, The British Interplanetary Society, United Kingdom;

Rapporteur(s): Marius Bach, DLR (German Aerospace Center), Germany;

IAC-21.B3.6-A5.3.1 (confirmed)

TESTING ROVERS FOR HUMAN AND ROBOTIC LUNAR EXPLORATION IN THE ESA/DLR LUNA ANALOGUE FACILITY
Martial Costantini, ESA, Germany

IAC-21.B3.6-A5.3.6 (confirmed)

MULTI CRITERIA STUDY OF THE EFFECT AND RISKS ON HUMAN PHYSIOLOGY AND PSYCHOLOGY IN AEROSPACE AND THE EFFECT OF THE ROBOTICS ALTERNATIVE IN SPACE COMMUNICATION AND EXPLORATION
Hadeel Modhish, Princess Nourah Bint Abdul Rahman University, Saudi Arabia

B3.7. Advanced Systems, Technologies, and Innovations for Human Spaceflight

October 28 2021, 14:45 — Sheikh Maktoum B

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-21.B3.7.1 (confirmed)

EXTENDED REALITY APPLICATIONS FOR HUMAN SPACEFLIGHT: THE ESA-EAC XR LAB
Martial Costantini, ESA, Germany

IAC-21.B3.7.2 (confirmed)

THE HUMAN FACTORS OF YOUR CAR AND YOUR VIDEO GAME ARE DESIGNING NEW SPACE MISSIONS
Anilkumar Dave, INFINITE AREA, Italy

IAC-21.B3.7.4 (confirmed)

PROSPECTIVE FOR MICROBIAL FUEL ELEMENTS APPLICATION IN BIOLOGICAL LIFE SUPPORT SYSTEMS
Viacheslav Ilyin, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25–29 October 2021 | Dubai, United Arab Emirates

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IAC-21.B3.7.5 (confirmed)

BIO-REGENERATIVE LIFE SUPPORT SYSTEMS FUNCTIONAL STABILITY INDICATORS USING THEORETICAL MODELING
Curt Holmer, Department of Space Studies, University of North Dakota, United States

IAC-21.B3.7.8 (confirmed)

SPACESHIP FR A NEW CONTRIBUTOR TO SPACE EXPLORATION & HUMAN SPACEFLIGHT
Marcos Eduardo Rojas Ramirez, Centre National d'Etudes Spatiales (CNES), France

IAC-21.B3.7.10 (confirmed)

USING COMPUTATIONAL TECHNIQUES FOR THE OPTIMAL DESIGN OF EVOLVING HABITATS
Thomas Lagarde, Sasakawa International Center for Space Architecture, France

B3.8. Human Space & Exploration

October 29 2021, 09:45 — *Sheikh Maktoum B*

Co-Chair(s): Dan King, MDA Corporation, Canada;

IAC-21.B3.8.2 (confirmed)

PATHWAYS TO SUSTAINABLE HUMAN SPACE EXPLORATION ARCHITECTURES
Markus Landgraf, European Space Agency (ESA), The Netherlands

IAC-21.B3.8.3 (confirmed)

THE FUTURE OF HUMAN EXPLORATION STARTS NOW - SNC'S KEYS TO ENABLING SUSTAINABLE HUMAN SPACE EXPLORATION
Neeraj Gupta, Sierra Space, United States

IAC-21.B3.8.4 (confirmed)

HALO, THE FIRST HABITABLE ELEMENT FOR CISLUNAR STATION AND MISSION: ITALIAN ROLE AND CHALLENGES
Annamaria Piras, Thales Alenia Space Italia, Italy

IAC-21.B3.8.5 (confirmed)

HABITAT EXTENSIBILITY TO THE LUNAR SURFACE AND MARS
Amber Rist, The Boeing Company, United States

IAC-21.B3.8.7 (confirmed)

DYNETICS HUMAN LANDING SYSTEM: OVERVIEW AND STATUS OF THE LUNAR SPACE TRANSPORTATION SYSTEM
Andrew Crocker, Dynetics, United States

IAC-21.B3.8.10 (confirmed)

SPACEFLIGHT-ASSOCIATED CHANGES IN THE PERIVASCULAR SPACES OF ASTRONAUTS AND COSMONAUTS
Giuseppe Barisano, University of Southern California, United States

IAC-21.B3.8.12 (confirmed)

A MARS 2033 HUMAN FLYBY
Matthew Duggan, The Boeing Company, United States

B3.9-GTS.2. Human Spaceflight Global Technical Session

October 29 2021, 13:30 — *Dubai D*

Co-Chair(s): Guillaume Girard, Zero2infinity, Spain; Andrea Jaime, Universitat Politècnica de Catalunya (UPC), Spain;

📺 IAC-21.B3.9-GTS.2.1 (video)

CAREER DESIGN IN SPACE - FROM CHALLENGED TO CHALLENGING
Ayako Kurono, Japan

IAC-21.B3.9-GTS.2.3 (confirmed)

TTETHERNET NETWORK PLATFORM FOR ADVANCED SPACE EXPLORATION AVIONICS ARCHITECTURES
David Jelem, TTTech Computertechnik AG, Austria

IAC-21.B3.9-GTS.2.5 (confirmed)

CREATION OF A DATABASE OF THE MICROBIOME OF ASTRONAUTS
Marina Skedina, State Scientific Center of Russian Federation, Institute of Biomedical Problems, Russian Academy of Sciences, Russian Federation

IAC-21.B3.9-GTS.2.6 (confirmed)

PRE AND POST-FLIGHT CORTICAL VEIN ENLARGEMENT AND ITS ASSOCIATION WITH SPACEFLIGHT-ASSOCIATED NEURO-OCULAR SYNDROME
Mark Rosenberg, Medical University of South Carolina, United States

IAC-21.B3.9-GTS.2.8 (confirmed)

THE EFFECT OF PREVIOUS SPACEFLIGHT ON OTOLITH-MEDIATED OCULAR COUNTER-ROLL IN COSMONAUTS AFTER LONG DURATION SPACEFLIGHT
Catho Schoenmaekers, University of Antwerp, Belgium

IAC-21.B3.9-GTS.2.9 (confirmed)

THE PRESENT, PAST AND FUTURE OF SPACE SUITS FOR SPACE TRAVEL
Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.B3.9-GTS.2.10 (confirmed)

CONSIDERATION OF THE FUTURE PROSPECTS OF THE SPACE FLIGHT ATTENDANT(SFA) PROFESSION WITH THE EXPANSION OF SPACE TRAVEL MARKETING.
Chieko Takahashi, ASTRAX IMAGINE, Inc., Japan

B3.IP. Interactive Presentations - IAF HUMAN SPACEFLIGHT SYMPOSIUM

October 28 2021, 13:15 — *IP Area*

Co-Chair(s): Peter Batenburg, Netherlands Space Society (NVR), The Netherlands;

IAC-21.B3.IP.1 (confirmed)

MBRSC AND ESA COOPERATION FOR THE ESTABLISHMENT OF UAE OPERATIONS SUPPORT CENTRE
Mohammad Alblooshi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.B3.IP.4 (confirmed)

INTUITIVE ASTRONAUT MANEUVERING UNIT FOR EXTRA VEHICULAR MISSIONS
Yukta Sharma, India

B4. 28th 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. 22nd Workshop on Small Satellite Programmes at the Service of Developing Countries

October 26 2021, 09:45 — *Sheikh Rachid D*

Co-Chair(s): Sias Mostert, Space Commercial Services Holdings (Pty) Ltd, South Africa; Nathalie RICARD, United Nations Office for Outer Space Affairs, Austria;

Rapporteur(s): Danielle Wood, Massachusetts Institute of Technology (MIT), United States; Pierre Mulette, , France;

IAC-21.B4.1.1 (confirmed)

OPPORTUNITIES FOR CUBESAT DEPLOYMENT UNDER THE UNITED NATIONS ACCESS TO SPACE 4 ALL INITIATIVE: ACHIEVEMENTS IN 2020-2021
Jorge Del Rio Vera, United Nations Office for Outer Space Affairs, Austria

IAC-21.B4.1.3 (confirmed)

BUILDING COMPREHENSIVE THAILAND SPACE CAPACITY THROUGH THEOS-2 SMALLSAT
Atipat Wattanuntachai, Geo-Informatics and Space Technology Development Agency (GISTDA), Thailand

IAC-21.B4.1.5 (confirmed)

THE FIRST SATELLITES OF NEPAL, SRI LANKA (BIRDS-3); PARAGUAY (BIRDS-4); AND ZIMBABWE, UGANDA (BIRDS-5)
George Maeda, Kyushu Institute of Technology, Japan

IAC-21.B4.1.6 (confirmed)

DEVELOPMENT STATUS OF A FIRST DOMESTICALLY-BUILT SATELLITE PROJECT OF MONGOLIA
Turtgotkh Tumenjargal, National University of Mongolia, Mongolia

IAC-21.B4.1.8 (confirmed)

BRINGING SPACE SOLUTION TO NATIONAL NEEDS THROUGH NATIONAL MICROSATELLITE PROJECTS
Christina Giannopapa, Ministry of Digital Governance of Greece, Greece

IAC-21.B4.1.9 (confirmed)

THE WILDTRACKCUBE-SIMBA CUBESAT: ITALIAN-KENYAN MISSION FOR WILDLIFE MONITORING
Paolo Marzioli, Sapienza University of Rome, Italy

IAC-21.B4.1.11 (confirmed)

TOWARD A REUSABLE AND FAIL-SAFE FLIGHT SOFTWARE ARCHITECTURE FOR COST-EFFICIENT STUDENT CUBESAT MISSIONS
Ibtissam Latachi, Al Akhawayn University in Ifrane, Morocco

▶ IAC-21.B4.1.13 (video)

DESIGN AND SIMULATION OF SMALL SATELLITE MISSIONS USING FREE ACCESS TOOLS
Avid Roman-Gonzalez, Business on Engineering and Technology S.A.C. (BE Tech), Peru

B4.2. Small Space Science Missions

October 25 2021, 15:15 — Sheikh Rachid D

Co-Chair(s): Larry Paxton, The John Hopkins University Applied Physics Laboratory, United States; Norbert M.K. Lemke, OHB System AG - Munich, Germany;

Rapporteur(s): Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom; Oana van der Togt, TNO, The Netherlands;

IAC-21.B4.2.2 (confirmed)

SCIENTIFIC CONTRIBUTION OF SHARJAH-SAT-1 TO X-RAY OBSERVATIONS
Emrah Kalemci, Sabanci University, Turkey

▶ IAC-21.B4.2.3 (video)

ON-ORBIT OBSERVATION OF TOTAL ELECTRON CONTENT IN THE IONOSPHERE BY UHF RANGING SIGNAL FROM THE GROUND
Makiko Kishimoto, LaSEINE, Kyushu Institute of Technology, Japan

IAC-21.B4.2.5 (confirmed)

PRELIMINARY MISSION DESIGN OF CUBESAT FOR HIGH ENERGY ASTROPHYSICS POLARIMETRY
Jorge Bordalo Monteiro, Centre for Mechanical and Aerospace Science and Technologies (C-MAST), Portugal

IAC-21.B4.2.6 (confirmed)

LESSONS LEARNED AS THERMAL SUBSYSTEM LEAD FOR A STUDENT-DRIVEN CUBESAT PROJECT
Stéphanie Fiore, Concordia University, Canada

IAC-21.B4.2.7 (confirmed)

CUBESAT MISSION CONCEPT FOR ENVIRONMENTAL ANALYSIS IN LOW EARTH ORBIT
Marco Paolo Brenna, Politecnico di Milano, Italy

IAC-21.B4.2.9 (confirmed)

PROJECT APTAS - USING CUBESAT DESIGN AND DEVELOPMENT TO BRING STUDENTS INTO NORTHERN SWEDEN'S SPACE ECOSYSTEM
Matias Rittatore Texeira, Luleå Technical University, Sweden

IAC-21.B4.2.10 (confirmed)

LAUNCH, OPERATIONS, AND FIRST EXPERIMENTAL RESULTS OF THE SATELLITE FOR ORBITAL AERODYNAMICS RESEARCH (SOAR)
Nicholas H. Crisp, The University of Manchester, United Kingdom

▶ IAC-21.B4.2.12 (video)

DESIGN CHALLENGES AND OPPORTUNITIES OFFERED BY THE LUMIO SPACECRAFT: A CUBESAT FOR OBSERVING AND CHARACTERIZING MICRO-METEOROID IMPACTS ON THE LUNAR FAR SIDE
Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands

B4.3. Small Satellite Operations

October 26 2021, 14:45 — Sheikh Rachid D

Co-Chair(s): Andreas Hornig, University of Stuttgart, Germany; Peter M. Allan, STFC, United Kingdom; Stephan Roemer, Antwerp Space, Belgium;

Rapporteur(s): Lynette Tan, Singapore Space and Technology LTD (SSTL), Singapore, Republic of;

IAC-21.B4.3.1 (confirmed)

KEYNOTE: CAPSTONE: PATHFINDER FOR THE LUNAR GATEWAY
Jeffrey Parker, Advanced Space, United States

IAC-21.B4.3.2 (confirmed)

UNISAT-7 : A SMALL SATELLITE WITH BIG POTENTIAL
Filippo Graziani, G.A.U.S.S. Srl, Italy

▶ IAC-21.B4.3.3 (confirmed)

DEPLOYING A SMALL SATELLITE-BASED NETWORK OF GROUND SENSOR TERMINALS (GSTS) IN DEVELOPING NATIONS FOR ENABLING REMOTE INTERNET OF THINGS (IOT)
Pooja Lepcha, Kyushu Institute of Technology, Japan

IAC-21.B4.3.4 (confirmed)

DISRUPTIVE INNOVATIONS IN SATELLITE MISSIONS: A MANAGERIAL PERSPECTIVE
Davide Vittori, AIKO S.r.l., Italy

▶ IAC-21.B4.3.5 (video)

A FLEXIBLE GROUND SEGMENT FOR SMALL SATELLITE OPERATIONS
Martin Elfvelin, Luleå University of Technology, Sweden

IAC-21.B4.3.6 (confirmed)

EXPERIENCE WITH COMPASS-BASED IOT APPROACH USED IN NETSAT FORMATION MISSION
Slavi Dombrovski, Zentrum für Telematik, Germany

▶ IAC-21.B4.3.7 (video)

ORBIT DESIGN AND ANALYSIS OF ARTIFICIAL METEORS GENERATING MICRO-SATELLITES
Yoshihiko Shibuya, Tohoku University, Japan

IAC-21.B4.3.8 (confirmed)

RECONSTRUCTION OF MOTION RELATIVE TO THE CENTER OF MASS OF A LOW-ALTITUDE NANOSATELLITE FROM TRAJECTORY MEASUREMENTS
Igor V. Belokonov, Samara National Research University (Samara University), Russian Federation

IAC-21.B4.3.11 (confirmed)

ASSEMBLY, TESTING, QUALIFICATION AND PLANNED OPERATIONS OF THE LEDSAT CUBESAT MISSION
Paolo Marzioli, Sapienza University of Rome, Italy

IAC-21.B4.3.12 (confirmed)

SOFTWARE-DEFINED GROUND STATION ARCHITECTURE OF A FOUR-SATELLITE 3D FORMATION FLYING MISSION
Tim Horst, University of Würzburg, Germany

B4.4. Small Earth Observation Missions

October 27 2021, 09:45 — Sheikh Rachid D

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, European Space Agency (ESA), Switzerland; Marco Gomez Jenkins, University of Cambridge, United Kingdom;

IAC-21.B4.4.1 (confirmed)

DEMONSTRATION OF GNSS-REFLECTOMETRY TECHNOLOGY FOR A SECONDARY PAYLOAD ON SMALL SATELLITES

Martin J. Unwin, Surrey Satellite Technology Ltd (SSTL), United Kingdom

IAC-21.B4.4.2 (confirmed)

IN-ORBIT MEASUREMENT OF S-BAND RADIO NOISE DURING THE FLYING LAPTOP SATELLITE MISSION

Maximilian Boettcher, Institute of Space Systems, University of Stuttgart, Germany

IAC-21.B4.4.3 (confirmed)

PLT-1 SAR MISSION - PLATINO MULTI-MISSION PLATFORM APPROACHING FIRST FLIGHT

Vincenzo Stanzione, Sitael Spa, Italy

IAC-21.B4.4.4 (confirmed)

DAILYVISION@1M: LOW-COST SUBMETER EARTH OBSERVATION MICROSAT CONSTELLATION

Kammy Brun, China Head Aerospace Technology Co., France

▶ IAC-21.B4.4.5 (video)

ON-BOARD FAST-MOVING TARGET TRACKING ON REMOTE SENSING IMAGES FOR MICRO-NANO SATELLITES

Rui Zhang, Space Engineering University (Beijing), China

IAC-21.B4.4.6 (confirmed)

RETRIEVING 3D MICROPHYSICAL PROPERTIES OF SHALLOW CLOUDS WITH NANOSATELLITES FLYING IN FORMATION

Lukas Draschka, Zentrum für Telematik, Germany

IAC-21.B4.4.7 (confirmed)

HIGH-RESOLUTION OPERATIONAL EARTH OBSERVATION FROM A 6U SMALL SATELLITE

Hugo Brouwer, ISIS - Innovative Solutions In Space B.V., The Netherlands

▶ IAC-21.B4.4.10 (video)

DUAL-APERTURE DESIGN FOR MULTISPECTRAL EARTH OBSERVATION PAYLOAD FROM A NANOSATELLITE

Elliot Saive, University of Alberta, Canada

IAC-21.B4.4.12 (confirmed)

DARKCARB: AN INNOVATIVE INFRARED IMAGING SMALL SATELLITE MISSION

Andrew Haslehurst, Surrey Satellite Technology Ltd (SSTL), United Kingdom

IAC-21.B4.4.13 (confirmed)

A MODULAR SPACE MISSION ARCHITECTURE FOR SMALL SATELLITE EARTH OBSERVATION MISSIONS.

Florian DECONINCK, Open cosmos Ltd., United Kingdom

B4.5. Access to Space for Small Satellite Missions

October 27 2021, 14:45 — Sheikh Rachid D

Co-Chair(s): Yves Gerard, Airbus Defence & Space, France; Philip Davies, Deimos Space UK Ltd, United Kingdom;

Rapporteur(s): Jeff Emdee, The Aerospace Corporation, United States; Carlos Niederstrasser, Northrop Grumman Corporation, United States;

IAC-21.B4.5.1 (confirmed)

KEYNOTE: SPEED TO SPACE: DEDICATED LAUNCH FOR SMALL SATELLITES ON ELECTRON

Lars Hoffman, Rocket Lab, United States

IAC-21.B4.5.3 (confirmed)

FROM SCOTLAND TO SPACE: BUILDING A UK SUPPLY CHAIN TO ALLOW LAUNCH CAPABILITY AND SATELLITES TO BE DELIVERED TO A LOW EARTH ORBIT FROM A UK SPACEPORT

Alan Thompson, Skyrora Ltd, United Kingdom

B4.5A-C4.8. Joint Session between IAA and IAF for Small Satellite Propulsion Systems

October 28 2021, 14:45 — Ajman D

Co-Chair(s): Jeff Emdee, The Aerospace Corporation, United States; Arnau Pons Lorente, Space Generation Advisory Council (SGAC), United States;

IAC-21.B4.5A-C4.8.4 (confirmed)

RESULTS OF THE OPERATION OF THE PETRUS 1J PULSED PLASMA THRUSTER UNIT ON GREENCUBE

Christoph Montag, Institute of Space Systems, Universität Stuttgart, Germany

IAC-21.B4.5A-C4.8.7 (confirmed)

PASSIVE, WATER-BASED PROPULSION SYSTEM AS A CUBESAT DRAG-MAKEUP PROPULSION UNIT FOR VERY LOW EARTH ORBIT OPERATIONS

Jin Kang, United States Naval Academy, United States

IAC-21.B4.5A-C4.8.9 (confirmed)

ADVANCED ELECTRODELESS PLASMA THRUSTER CONCEPTS FOR SMALL SATELLITES

Andrei Shumeiko, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-21.C4.8-B4.5A.10 (confirmed)

DESIGN AND VALIDATION OF A 12U CUBESAT TEST PLATFORM FOR THE VERIFICATION AT SYSTEM LEVEL OF MINIATURIZED ELECTRIC PROPULSION SYSTEMS

Sabrina Corpino, Politecnico di Torino, Italy

B4.6A. Generic Technologies for Small/Micro Platforms

October 28 2021, 09:45 — Sheikh Rachid D

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-21.B4.6A.1 (confirmed)

THE PATH TO THE FIRST FLIGHT OF THE NEXT GENERATION MICRO-SATELLITE PLATFORM: DELIVERING SMALLSAT PERFORMANCE FOR A CUBESAT COST

Anita Bernie, KISPE Space Systems Limited, United Kingdom

▶ IAC-21.B4.6A.5 (video)

ON-ORBIT INTELLIGENT PROCESSING BASED ON EMBEDDED GPU ON Q-SAT

Qingyun Fang, Tsinghua University, China

▶ IAC-21.B4.6A.6 (video)

GNSS RECEIVER FOR Q-SAT AND ITS ANALYSIS OF PRECISE ORBIT DETERMINATION

Yingkai Cai, Tsinghua University, China

▶ IAC-21.B4.6A.7 (video)

LOW-COST THERMAL TEST AND FLIGHT VALIDATION OF Q-SAT

Boxin Li, Tsinghua University, China

IAC-21.B4.6A.9 (confirmed)

FIRST FLIGHT OF RAFTI ORBITAL REFUELING INTERFACE
James Bultitude, Orbit Fab, United States

IAC-21.B4.6A.10 (confirmed)

A CASE STUDY OF A MOTORISED FLEXIBLE IOD PLATFORM: THE UNISAT-7 AND REGULUS MISSION.
Fabiana Milza, T4i, Italy

IAC-21.B4.6A.11 (confirmed)

EXPERIMENTAL VERIFICATION OF POINTING AND TRACKING SYSTEM OF OPTICAL COMMUNICATION TERMINAL FOR SMALL SATELLITES
Francesco Sansone, Italy

IAC-21.B4.6A.12 (confirmed)

MICROHETSAT READY TO LAUNCH: RESULTS OF SPACECRAFT QUALIFICATION AND PREPARATION OF THE ACCEPTANCE-FOR-FLIGHT TEST CAMPAIGN
Alberto Corbelli, Sitael Spa, Italy

B4.6B. Generic Technologies for Nano/Pico Platforms

October 29 2021, 13:30 — Sheikh Rachid D

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, Germany; Eugene D Kim, Satrec Initiative, Korea, Republic of;

IAC-21.B4.6B.1 (confirmed)

PLUG-AND-FLY SATELLITE (SPIN-1 MISSION)
Saish Sridharan, Space Products and Innovation, Germany

IAC-21.B4.6B.2 (video)

MODULAR SELF-RECONFIGURABLE SPACECRAFT BASED ON SMART BRICKS
Zhi Yang, DFH Satellite Co. Ltd., China

IAC-21.B4.6B.3 (video)

A NOVEL NANOSATELLITE HEAT MANAGEMENT SYSTEM VIA ACTIVELY SWITCHED THERMAL PATHWAYS
Rainer Kuusvek, University of Glasgow, United Kingdom

IAC-21.B4.6B.6 (video)

SALSAT: FIRST YEAR IN ORBIT – PRELIMINARY ASSESSMENT OF THE NANOSATELLITE BUS, SUBSYSTEMS, AND THE PAYLOADS
Jens Großhans, Technische Universität Berlin, Germany

IAC-21.B4.6B.7 (confirmed)

COMBINED ENVIRONMENTAL TESTING DEVICE FOR PICOSATELLITES
Adam Dąbrowski, Gdansk University of Technology, Poland

IAC-21.B4.6B.8 (confirmed)

HARDWARE-IN-LOOP STAR TRACKER EMULATOR
Willem Steyn, Stellenbosch University, South Africa

IAC-21.B4.6B.10 (confirmed)

NANOSATELLITES GROUP FOR EARTH ENVIRONMENT OBSERVATION
Dmitry Rachkin, Bauman Moscow State Technical University, Russian Federation

IAC-21.B4.6B.11 (video)

POWERSAT – A SMALL BUT MIGHTY MISSION FOR THE GENERATION OF 100W WITHIN A 1U FORM FACTOR
Pauline Faure, California Polytechnic State University, United States

B4.7. Constellations and Distributed Systems

October 28 2021, 14:45 — Sheikh Rachid D

Co-Chair(s): Rainer Sandau, International Academy of Astronautics (IAA), Germany; Danil Ivanov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation;

Rapporteur(s): Jaime Esper, National Aeronautics and Space Administration (NASA), United States; Aaron Rogers, Maxar Technologies, United States;

IAC-21.B4.7.1 (confirmed)

A SHARED CUBESAT AND LEO CONSTELLATION FOR QUANTUM KEY DISTRIBUTION SERVICE AND 5G IOT SERVICE: QUANGO PROJECT OVERVIEW AND DESIGN CONSIDERATIONS
Danilo Sarica, Argotec, Italy

IAC-21.B4.7.2 (confirmed)

A DISTRIBUTED NANO-SATELLITE CONSTELLATION FOR GRAVITY FIELD RECOVERY AND ATMOSPHERIC NEUTRAL DENSITY ESTIMATION
Tiago Hormigo, Spin.Works, Portugal

IAC-21.B4.7.3 (confirmed)

MULTI-CUBESAT MISSION FOR AURORAL ACCELERATION REGION STUDIES
Marley Castro, Luleå Technical University, Sweden

IAC-21.B4.7.4 (video)

MASSIVELY PARALLEL IN-SITU SENSING USING FEMTO-SPACECRAFT CLOUDS
Thomas Timmons, University of Glasgow, United Kingdom

IAC-21.B4.7.6 (confirmed)

AUTONOMY AND SAFETY CONSIDERATIONS FOR SATELLITE MEGA-CONSTELLATIONS
Maren Hülsmann, Universität der Bundeswehr München, Germany

IAC-21.B4.7.8 (confirmed)

NETSAT - FIRST IN-ORBIT RESULTS OF THE FOUR CUBESAT MISSION
Julian Scharnagl, Zentrum für Telematik, Germany

IAC-21.B4.7.10 (confirmed)

DESIGN SOLUTIONS FOR FORMATION-FLYING SAR SYSTEMS BASED ON MODULAR PLUG-AND-PLAY CUBESAT
Marco Grasso, University of Naples "Federico II", Italy

IAC-21.B4.7.13 (confirmed)

HERMES CONSTELLATION: A NEW PARADIGM FOR MULTI-MESSENGER ASTROPHYSICS WITH CUBESATS
Michèle Lavagna, Politecnico di Milano, Italy

IAC-21.B4.7.14 (confirmed)

TIMING TECHNIQUES APPLIED TO DISTRIBUTED MODULAR HIGH-ENERGY ASTRONOMY: THE HERMES PROJECT
Andrea Sanna, Università di Cagliari, Italy

B4.8. Small Spacecraft for Deep-Space Exploration

October 29 2021, 09:45 — Sheikh Rachid D

Co-Chair(s): Leon Alkalai, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Rene Laufer, Luleå University of Technology, Sweden;

Rapporteur(s): Amanda Stiles, Rocket Lab, United States; Jaime Esper, National Aeronautics and Space Administration (NASA), United States;

IAC-21.B4.8.2 (confirmed)

ARCHITECTURE OF A CUBESAT MISSION TO MEASURE RADIATION DOSE ON Cislunar ORBITS
Marion Burnichon, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France

IAC-21.B4.8.3 (confirmed)

LOCKHEED MARTIN DEEP SPACE SMALLSATS FOR SOLAR SYSTEM EXPLORATION
Christopher Nie, Lockheed Martin (Space Systems Company), United States

IAC-21.B4.8.4 (confirmed)

A VALIDATION AND CALIBRATION METHODOLOGY FOR AUTONOMOUS NAVIGATION OF SMALL SATELLITES
Sarah Ciaglia, Argotec, Italy

IAC-21.B4.8.5 (confirmed)

JUVENTAS CUBESAT IN SUPPORT OF HERA MISSION TO DIDYMOS ASTEROID SYSTEM: GENERAL UPDATE

Mehdi Scoubeau, GomSpace Aps, Luxembourg

IAC-21.B4.8.9 (confirmed)

ORACLE: A DUAL-SMALLSAT MISSION TO INVESTIGATE THE MARTIAN CLIMATE

Flavio Petricca, Sapienza University of Rome, Italy

IAC-21.B4.8.10 (confirmed)

A COMMUNICATION RELAY CUBESAT MISSION FOR MARS SOLAR CONJUNCTION

Kevin Burville, Simon Fraser University, Canada

IAC-21.B4.8.11 (confirmed)

SPATIAL MISSION DESIGN OF HIGH-INCLINED SOLAR PROBES USING GRAVITY ASSISTIS

Alexey Grushevskii, Keldysh Institute of Applied Mathematics of RAS, Russian Federation

B4.9-GTS.5. Small Satellite Missions Global Technical Session

October 28 2021, 14:45 — Dubai D

Co-Chair(s): Matthias Hetscher, DLR (German Aerospace Center), Germany; Norbert M.K. Lemke, OHB System AG - Munich, Germany;

Rapporteur(s): Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), United Kingdom;

IAC-21.B4.9-GTS.5.1 (confirmed)

SYSTEMS DESIGN OF A DEEP-SPACE MICROSATELLITE PLATFORM FOR MARS COMMUNICATION AND NAVIGATION CONSTELLATION

Valentina Marchese, Argotec, Italy

IAC-21.B4.9-GTS.5.3 (video)

THE BENEFITS OF SMALL SATELLITES AND SPACE TECHNOLOGY APPLICATIONS FOR DEVELOPING COUNTRIES: PERU CASE, UNSASAT-1

Jaime Gerson Cuba Mamani, Beihang University, China

IAC-21.B4.9-GTS.5.5 (confirmed)

THE GREENCUBE CUBESAT MISSION: DEVELOPMENT AND QUALIFICATION OF AN AUTONOMOUS MICROGREENS CULTIVATION SYSTEM AND DEMONSTRATION OF CUBESAT PROPULSION IN MEO

Paolo Marzioli, Sapienza University of Rome, Italy

IAC-21.B4.9-GTS.5.6 (confirmed)

A COMPACT AND LOW-POWERED PROTON DETECTOR FOR A NANO-SATELLITE

Sheetal Lokhande, College of Engineering Pune, India

IAC-21.B4.9-GTS.5.7 (confirmed)

BIRDS-NEST PHONE APPLICATION

Fahd Mounni, Laboratory of Spacecraft Environment Interaction Engineering, Kyushu Institute of Technology, Japan

IAC-21.B4.9-GTS.5.8 (confirmed)

DEVELOPMENT OF A NOVEL SPHERICAL LANGMUIR PROBE FOR CUBESAT IN ORDER TO SCIENTIFIC OPPORTUNITIES OF EXPLORATION BEYOND LEO

Shankar Bhattarai, Chosun University, Korea, Republic of

IAC-21.B4.9-GTS.5.9 (video)

KVARKENSAT: MISSION CONCEPT AND TECHNICAL OVERVIEW OF A 2U SWEDISH - FINNISH CUBESAT

Aris Golemis, Luleå University of Technology, Sweden

B4.IP. Interactive Presentations - 28th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS

October 28 2021, 13:15 — IP Area

Co-Chair(s): Danil Ivanov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation; Balbir Singh, Manipal Institute of Technology, Manipal Academy of Higher Education, India; Andreas Hornig, University of Stuttgart, Germany; Klaus Schilling, Zentrum für Telematik, Germany;

Rapporteur(s): Jian Guo, Delft University of Technology (TU Delft), The Netherlands;

IAC-21.B4.IP.3 (confirmed)

INTERNATIONAL COOPERATION FOR THE DEVELOPMENT OF HUMAN CAPITAL IN STUDENTS IN DEVELOPING COUNTRIES IN THE AEROSPACE SECTOR:

Axel Núñez Arzola, Facultad de Ingeniería-UNAM, Mexico

IAC-21.B4.IP.4 (video)

CHINA'S COMMERCIAL SPACE PROGRESS

Lianxiang Jiang, China Academy of Space Technology (CAST), China

IAC-21.B4.IP.7 (video)

Q-SAT FOR ATMOSPHERE AND GRAVITY FIELD DETECTION:

DESIGN, MISSION AND PRELIMINARY RESULTS

Zhaokui Wang, Tsinghua University, China

IAC-21.B4.IP.8 (confirmed)

MISSION AND SYSTEM DESIGN FOR 80KG-CLASS X-BAND ACTIVE SAR SATELLITE OF S-STEP

Jihae Son, Hanwha Thales, Korea, Republic of

IAC-21.B4.IP.10 (confirmed)

TAKING A SELFIE IN SPACE: AN OVERVIEW ON A SPACE SELFIE STICK FOR SMALLSATS AND NANOSATS

Thomas Sinn, Deployables Cubed GmbH, Germany

IAC-21.B4.IP.13 (confirmed)

DEVELOPMENT AND PERFORMANCE MEASUREMENT OF FERROFLUID BASED ATTITUDE CONTROL ACTUATORS

Felix Schäfer, Institute of Space Systems, Universität Stuttgart, Germany

IAC-21.B4.IP.14 (confirmed)

MONITORING FOREST FIRE AND VOLCANIC ERUPTIONS USING SATELLITE CONSTELLATION

Rohan Chandra, University of Petroleum and Energy Studies, India

IAC-21.B4.IP.15 (confirmed)

MISC-3 A COLOMBIAN CUBESAT 3U FOR EARTH OBSERVING APPLICATIONS

Julian Rodriguez-Ferreira, Universidad Industrial de Santander, Colombia

IAC-21.B4.IP.16 (confirmed)

HUGIN: AN INNOVATIVE SMALL SPACECRAFT MISSION FOR DEEP-SPACE EXPLORATION TECHNOLOGY DEMONSTRATION

Ioana-Simona Rosca, Luleå University of Technology, Sweden

IAC-21.B4.IP.20 (confirmed)

TECHNOLOGIES AND FACILITIES FOR THE AIV/AIT PHASE OF NANOSATELLITE ADCS SUBSYSTEMS: HERMES AS AN APPLICATIVE CASE

Lorenzo Colaninno, Politecnico di Milano, Italy

IAC-21.B4.IP.22 (confirmed)

3D MODEL OF A PLANET'S ATMOSPHERE USING A MEGA CLUSTER OF 10-GRAM CHIPSATS.

Uri Greisman Ran, Israel

IAC-21.B4.IP.23 (confirmed)

OPERATIONAL RESULTS OF A GNSS PAYLOAD FOR PRECISE POSITION AND ORBIT DETERMINATION OF BEESAT-9

Sascha Weiss, TU Berlin, Germany

IAC-21.B4.IP.24 (confirmed)

BATTERY TEMPERATURE BEHAVIOR IN CUBESATS AT LOW EARTH ORBIT: FROM TELEMETRY TO GROUND TESTING

Vaclav Knap, GomSpace Aps, Denmark

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 25 2021, 15:15 — Abu Dhabi B

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, European Space Agency (ESA), United Kingdom;

IAC-21.B5.1.2 (confirmed)

DATA FOR GOOD: UAE SDG DATA HUB, AN INNOVATIVE WAY IN JOINING HANDS FOR A BETTER WORLD

Marwa Elkabbany, UAE Federal Competitiveness and Statistics Centre (FCSC), United Arab Emirates

IAC-21.B5.1.3 (confirmed)

ADVANCED DATA CHAIN TECHNOLOGIES FOR THE NEXT GENERATION OF EARTH OBSERVATION SATELLITES SUPPORTING ON-BOARD PROCESSING FOR RAPID CIVIL ALERTS

Murray Kerr, Deimos Space SLU, Spain

IAC-21.B5.1.4 (video)

DEPTH IMAGE OPTIMIZATION OF FIELD ENVIRONMENT BASED ON FUSION FILTERING

Wenyuan Wang, University of Electronic Science and Technology of China (UESTC), China

IAC-21.B5.1.5 (confirmed)

ARTIFICIAL INTELLIGENCE FOR ONBOARD IMAGE PROCESSING

Mattia Varile, AIKO S.r.l., Italy

IAC-21.B5.1.7 (video)

APPLICATION OF IMPROVED TARGET DETECTION ALGORITHM IN AERIAL REMOTE SENSING IMAGE

Wenyuan Du, University of Electronic Science and Technology of China (UESTC), China

IAC-21.B5.1.8 (confirmed)

CONCEPT OF ASTRAX UNIVERSAL SENSOR, A GENERAL-PURPOSE UNIVERSAL SENSOR FOR SENSING THE SPECIAL ENVIRONMENT OF SPACE

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.B5.1.14 (confirmed)

ONBOARD EXPLAINABLE ARTIFICIAL INTELLIGENCE

Guglielmo Faggioli, AIKO S.r.l., Italy

IAC-21.B5.1.15 (confirmed)

ESA BUSINESS APPLICATIONS AMBASSADOR PLATFORM FOR ITALY COVID-19 EXPERIENCE: TOOLS FOR ACCELERATING THE ITALIAN INDUSTRIAL PROGRESS AND INNOVATION

Valerio Roscani, Fondazione E. Amaldi, Italy

B5.2. Integrated Applications End-to-End Solutions

October 27 2021, 14:45 — Dubai C

Co-Chair(s): Boris Penne, OHB System AG, Germany; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom;

Rapporteur(s): Stefano Ferretti, European Space Agency (ESA), Italy; Beatrice Barresi, European Space Agency (ESA), United Kingdom;

IAC-21.B5.2.1 (confirmed)

SPACE TECHNOLOGY FOR WATER RESOURCE MANAGEMENT – COMMUNITY BUILDING AND STAKEHOLDER ENGAGEMENT: THE SPACE4WATER PORTAL

Nina Kickinger, United Nations Office for Outer Space Affairs, Austria

IAC-21.B5.2.2 (confirmed)

SPACE APPLICATIONS IN SUB-SAHARAN AFRICA HAVE IMPACT ON MORE THAN A DOZEN SUSTAINABLE DEVELOPMENT GOALS

Elias Montanari, European Space Agency (ESA), United Kingdom

IAC-21.B5.2.3 (video)

AN EARTH OBSERVATION COGNITIVE SYSTEM IN RESPONSE TO SARS-COVID-19 EMERGENCY

Sofiane Atek, Sapienza University of Rome, Italy

IAC-21.B5.2.4 (confirmed)

MITIGATING THE IMPACTS OF PANDEMICS ON THE SUPPLY CHAIN USING EARTH OBSERVATION DATA.

Veronica Chigoziri Obodozie, International Space University, Nigeria

IAC-21.B5.2.8 (confirmed)

1MAP: UAE GEO DATA COLLABORATION

Marwa Elkabbany, UAE Federal Competitiveness and Statistics Centre (FCSC), United Arab Emirates

IAC-21.B5.2.9 (confirmed)

SPACE4MARITIME: DIVING INTO SPACE-BASED SOLUTIONS FOR THE MARITIME DOMAIN. CASE STUDIES TO IDENTIFY CHALLENGES AND OPPORTUNITIES TO FOSTER TO COLLABORATION BETWEEN SERVICE PROVIDERS AND MARITIME END- USERS' COMMUNITIES

Alessandra Vernile, EURISY, France

IAC-21.B5.2.15 (video)

ISRU AND THE OFF-EARTH MINING VALUE-CHAIN: AN INTEGRATED CIRCULAR ECONOMY FOR SPACE RESOURCES

Jane Hodgkinson, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia

IAC-21.B5.2.16 (confirmed)

AUSTRALIAN REMOTE OPERATIONS CAPABILITY REPORT

Sarah Cannard, Australian Remote Operations for Space and Earth (AROSE), Australia

B5.3. Satellite Commercial Applications

October 28 2021, 09:45 — Dubai C

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-21.B5.3.1 (confirmed)

AFFORDABLE COMMERCIAL ACCESS TO SPY SATELLITE QUALITY IMAGERY

Kannas Wiid, Dragonfly Aerospace, South Africa

IAC-21.B5.3.4 (confirmed)

ESA BUSINESS APPLICATIONS SUPPORTING DEVELOPMENT AND SUSTAINABILITY

Maria-Gabriella Sarah, European Space Agency (ESA), France

IAC-21.B5.3.6 (video)

RESEARCH ON VIDEO MOVING TARGET DETECTION ALGORITHM BASED ON IMPROVED TARGET DETECTION NETWORK

Wenyuan Du, University of Electronic Science and Technology of China (UESTC), China

B6. IAF SPACE OPERATIONS SYMPOSIUM

Coordinator(s): John Auburn, Astroscale Ltd, United Kingdom; Otfried G. Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;

B6.1. Ground Operations - Systems and Solutions

October 26 2021, 14:45 — Dubai C

Co-Chair(s): Sean Burns, EUMETSAT, Germany; Thierry Levoir, CNES, France;

Rapporteur(s): Regina Mosenkis, Airbus Defence & Space, Germany; Keyur Patel, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;

▶ IAC-21.B6.1.1 (video)

APSCO MULTI-FUNCTIONAL DISTRIBUTED GROUND STATION NETWORK AND APPLICATION
Xinsheng Wang, Beihang University, China

IAC-21.B6.1.2 (confirmed)

GROUND STATION SYSTEM SUPPORTING INTEGRATED EO AND IOT SATELLITE APPLICATION
Kammy Brun, China Head Aerospace Technology Co., France

IAC-21.B6.1.3 (confirmed)

CONSTRUCTION OF AN EARTH STATION AND DIMENSIONING OF A CONTROL AND TRACKING CENTER FOR DRONES AND SATELLITES IN LOW ORBITS
Elísio Pataca, Angola

IAC-21.B6.1.4 (confirmed)

SUPPORTING LAUNCHERS WITH CONVENTIONAL SATELLITE GROUND STATIONS: A NEW FUNCTIONALITY FOR THE ANTARCTIC STATION GARS O'HIGGINS
Pierre-Alexis Lagadrilliere, DLR (German Aerospace Center), Germany

IAC-21.B6.1.5 (confirmed)

EVALUATING ANOMALY DETECTION IN SATELLITE TELEMETRY DATA
Jakub Nalepa, KP Labs, Poland

IAC-21.B6.1.7 (confirmed)

ORCHESTRATING OPERATIONS IN THE SATELLITE CONTROL CENTRE AND BEYOND
Radim Badsí, France

IAC-21.B6.1.8 (confirmed)

SCOTA – THE MISSION PLANNING ORBIT ANALYSIS TOOL AT GSOC
Elke Gross, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.B6.1.9 (confirmed)

LOCALIZATION SYSTEMS AND RECOVERY OF HAYABUSA2 SAMPLE RETURN CAPSULE
Tetsuya Yamada, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-21.B6.1.10 (confirmed)

MODEL-BASED SYSTEM ENGINEERING (MBSE) APPLIED TO GROUND SEGMENT DEVELOPMENT OF SPACE MISSIONS: NEW CHALLENGES
Antonio Cassiano Julio Filho, Instituto Nacional de Pesquisas Espaciais (INPE), Brazil

IAC-21.B6.1.12 (confirmed)

INUVIK GROUND STATION: EXPERIENCE FROM THE OPERATIONS OF SENTINEL-5P
Samuel Peterson, Swedish Space Corporation, United States

IAC-21.B6.1.13 (confirmed)

EMIRATES MARS MISSION (GROUND SEGMENT) – ENABLING MAXIMUM SCIENCE RETURN THROUGH THE EFFICIENT USE OF RE-TRANSMIT REQUESTS
Hamad Alhazami, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

B6.2. New Space Operations Concepts and Advanced Systems

October 28 2021, 14:45 — Dubai C

Co-Chair(s): Mario Cardano, Thales Alenia Space France, Italy; Thomas Kuch, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

Rapporteur(s): Jackelynne Silva-Martinez, NASA, United States; Yuichiro Nogawa, Japan Manned Space Systems Corporation (JAMSS), Japan;

IAC-21.B6.2.1 (confirmed)

FULLY AUTOMATED CLOUD BASED SCIENCE DATA PROCESSING FOR EMIRATES MARS MISSION
Omrnan Al Hammadi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.B6.2.2 (confirmed)

ORBITAL SERVICE SPACECRAFT "SERVISER"
Sergiy Matviiyenko, JSC "RPC "KURS", Ukraine

IAC-21.B6.2.3 (confirmed)

AISTECHSAT-2 AND AISTECHSAT-3 UHF TELEMETRY AND PAYLOAD DATA RELIABLE VS UNRELIABLE CHANNEL EFFICIENCY DURING NOMINAL OPERATIONS
James Joseph Shawe, Aistech Space, Spain

IAC-21.B6.2.4 (confirmed)

AN AI-BASED GOAL-ORIENTED AGENT FOR ADVANCED ON-BOARD AUTOMATION
Alessandro Benetton, AIKO S.r.l., Italy

IAC-21.B6.2.6 (confirmed)

ARTIFICIAL INTELLIGENCE IN SPACE: CURRENT STATUS AND FUTURE CHALLENGES – A REVIEW
Maren Hülsmann, Universität der Bundeswehr München, Germany

IAC-21.B6.2.7 (confirmed)

REPLACING THE TDP-1 MISSION PLANNING SYSTEM – MORE THAN JUST ANOTHER TECHNICAL DEMONSTRATION PROJECT
Maria Theresia Wörle, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.B6.2.8 (confirmed)

TOWARDS EXPLAINABILITY OF ON-BOARD SATELLITE SCHEDULING FOR END USER INTERACTIONS
Cheyenne Powell, University of Strathclyde / Mechanical and Aerospace Engineering, United Kingdom

IAC-21.B6.2.9 (confirmed)

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Stefania Cornara, Deimos Space S.L., Spain

IAC-21.B6.2.10 (confirmed)

OHB DIGITAL CONNECT: STEP INTO THE FUTURE OF EFFICIENT GROUND SOLUTIONS
Madlen Behnisch, OHB Digital, Germany

IAC-21.B6.2.11 (confirmed)

ERMES: A NEWSPACE MISSION CONTROL SW SUITE
Leonardo Amoruso, Planetek Hellas epe, Italy

IAC-21.B6.2.12 (confirmed)

COMMERCIAL SPACE MISSION SUPPORT CONTROL CENTER AND SUBORBITAL SPACECRAFT SIMULATOR TO SUPPORT COMMERCIAL SPACE MISSIONS AND PASSENGERS ACTIVITIES IN SPACE
Taichi Yamazaki, ASTRAX, Inc., Japan

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October 29 2021, 09:45 — Dubai C

Co-Chair(s): Andreas Rudolph, European Space Agency (ESA), Germany; Zeina Mounzer, Telespazio VEGA Deutschland GmbH, Germany;

Rapporteur(s): Borre Pedersen, Kongsberg Satellite Services AS, Norway; Matthew Duggan, The Boeing Company, United States;

IAC-21.B6.3.2 (confirmed)
PROGRAMMATIC ASPECT OF HAYABUSA2 SAMPLE RETURN CAPSULE RECOVERY OPERATION
Satoru Nakazawa, Japan Aerospace Exploration Agency (JAXA), ISAS, Japan

IAC-21.B6.3.3 (video)
DESIGN AND IMPLEMENTATION OF INTELLIGENT CONTROL SYSTEM FOR LUNAR SAMPLING&ENCAPSULATION
JIN Shengyi, Beijing Institute of Spacecraft System Engineering, China Academy of Space Technology (CAST), China

IAC-21.B6.3.4 (confirmed)
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Manuel Ntumba, Tod'Aers, Togo

IAC-21.B6.3.5 (confirmed)
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Margherita Piccinin, Politecnico di Milano, Italy

IAC-21.B6.3.8 (confirmed)
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Dmitry Rulev, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation

IAC-21.B6.3.9 (confirmed)
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Henrique Oliveira da Mata, Comando de Operações Aeroespaciais, Brazil

IAC-21.B6.3.10 (confirmed)
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Silver Lodi, SpacelT, Estonia

IAC-21.B6.3.11 (confirmed)
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Taichi Yamazaki, ASTRAX, Inc., Japan

B6.4-B3.4. Flight & Ground Operations of HSF Systems - A Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia

October 27 2021, 09:45 — Sheikh Maktoum B

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 A/S, Denmark; Mario Cardano, Thales Alenia Space France, Italy;

IAC-21.B6.4-B3.4.4 (confirmed)
DESIGN CASE STUDY OF A LEO TOURISM SPOT: ORBITAL, LOGISTICAL AND ECONOMIC CONSIDERATIONS
Chesler Thomas, Space Generation Advisory Council (SGAC), India

B6.IP. Interactive Presentations - IAF SPACE OPERATIONS SYMPOSIUM

October 28 2021, 13:15 — IP Area

Co-Chair(s): John Auburn, Astroscale Ltd, United Kingdom; Otrid G. Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;

IAC-21.B6.IP.2 (confirmed)
AN OPENSOURCE METHOD FOR FAST PRELIMINARY IDENTIFICATION AND ORBIT-DETERMINATION OF INDIVIDUAL (CUBE/SMALL) SATELLITES IN SUPER-CLUSTERS DEPLOYED FROM RIDESHARE LAUNCHES
Andreas Hornig, University of Stuttgart, Germany

IAC-21.B6.IP.5 (confirmed)
SOFT TRANSLATABLE ADVANCED ROBOT FOR IN-SPACE HANDLING (STARFISH)
David Barnhart, University of Southern California, United States

IAC-21.B6.IP.7 (video)
CONSTELLATIONS MONITORING WITH CASTEC
Chiara Brighenti, S.A.T.E., Italy

IAC-21.B6.IP.9 (video)
SOFTWARE DEVELOPMENT OF LAPAN-A2 AND LAPAN-A3 SATELLITE'S OPERATORS SCHEDULING
Annisa Sarah, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

IAC-21.B6.IP.10 (video)
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Mansu Seo, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-21.B6.IP.11 (video)
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Xiao LIU, Shanghai Aerospace Control Technology Institute (SACTI), China

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. Guidance, Navigation and Control (1)

October 25 2021, 15:15 — Sheikh Maktoum C

Co-Chair(s): Juan Carlos Bastante, OHB System AG-Bremen, Germany; Moriba Jah, The University of Texas at Austin, United States;

Rapporteur(s): Linli Guo, China Academy of Space Technology (CAST), China;

IAC-21.C1.1.2 (confirmed)
MIXED-INTEGER GA OPTIMIZATION FOR THE CONTROL OF A FORMATION OF SMALL SATELLITES EQUIPPED WITH MULTI-CONSTRAINED ELECTRIC THRUSTERS
Giovanni B. Palmerini, Sapienza University of Rome, Italy

IAC-21.C1.1.3 (confirmed)
TETHER-AIDED FORMATION KEEPING FOR MULTIPOINT SCIENTIFIC MEASUREMENTS IN LEO
Basel Omran, Skolkovo Institute of Science and Technology, Russian Federation

IAC-21.C1.1.4 (confirmed)

SEGMENTATION-DRIVEN 6D POSE ESTIMATION OF SPACECRAFT FOR VISION-BASED RELATIVE NAVIGATION IN SPACE
Karl Martin Kajak, DLR (German Aerospace Center), Germany

IAC-21.C1.1.5 (confirmed)

DESIGN OF NATURAL COLLISION-FREE TRAJECTORIES FOR THE MISSION EXTENSION PHASE OF A REMOTE SENSING FORMATION FLYING MISSION
Francesca Scala, Politecnico di Milano, Italy

IAC-21.C1.1.6 (confirmed)

COMBINED CONTROL AND NAVIGATION APPROACH TO THE ROBOTIC CAPTURE OF SPACE VEHICLES
Zeno Pavanello, University of Padova, DII / CISAS – “G. Colombo”, Italy

IAC-21.C1.1.7 (confirmed)

BEARING-ONLY NAVIGATION FOR PROXIMITY OPERATIONS ON CIS-LUNAR NON-KEPLERIAN ORBITS
Michele Ceresoli, Politecnico di Milano, Italy

▶ IAC-21.C1.1.9 (video)

AN ALGEBRAIC APPROACH FOR THE MOTION ESTIMATION OF A NON-COOPERATIVE SPACE DEBRIS TARGET
Tetsuya Kusumoto, The University of TOKYO, Graduate school, Japan

▶ IAC-21.C1.1.10 (video)

DUAL-QUATERNION BASED FINITE-TIME ADAPTIVE CONTROL FOR SPACECRAFT AUTONOMOUS PROXIMITY MANEUVER WITH PYRAMID-TYPE CONSTRAINTS
Liangyue Wang, Harbin Institute of Technology, China

IAC-21.C1.1.12 (confirmed)

FORMATION FLYING CONTROL OF THE RELATIVE TRAJECTORY SHAPE AND SIZE USING LORENZ FORCES
Danil Ivanov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

IAC-21.C1.1.13 (confirmed)

AN OVERVIEW OF AUTONOMOUS OPTICAL NAVIGATION FOR DEEP-SPACE CUBESATS
Eleonora Andreis, Politecnico di Milano, Italy

IAC-21.C1.1.14 (confirmed)

A NEW GUIDANCE AND CONTROL ARCHITECTURE FOR ORBIT DOCKING VIA FEEDBACK LINEARIZATION
Mauro Pontani, Sapienza University of Rome, Italy

C1.2. Guidance, Navigation and Control (2)

October 26 2021, 09:45 — Sheikh Maktoum C

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): Hanspeter Schaub, Colorado Center for Astrodynamics Research, University of Colorado, United States;

▶ IAC-21.C1.2.2 (video)

AUTONOMOUS CONTINUOUS LOW-THRUST RECONFIGURATION CONTROL FOR MEGA CONSTELLATIONS
Yun Xu, School of Aerospace, Tsinghua University, Beijing, China

▶ IAC-21.C1.2.6 (video)

ASTEROID LANDING TRAJECTORY OPTIMIZATION BASED ON STABILITY ROBUSTNESS CRITERION
Chengyu Zhang, Beijing Institute of Technology (BIT), China

IAC-21.C1.2.8 (confirmed)

ENHANCED EXPLORATION DESCENT THRUSTER MODELING AND CONTROL
Peter Schulte, The Charles Stark Draper Laboratory, Inc., United States

IAC-21.C1.2.11 (confirmed)

ENABLING INTELLIGENT ONBOARD GUIDANCE, NAVIGATION, AND CONTROL USING NEAR-TERM FLIGHT HARDWARE
Callum Wilson, University of Strathclyde, United Kingdom

IAC-21.C1.2.12 (confirmed)

MULTIPLE-SLIDING-SURFACE GUIDANCE AND CONTROL FOR TERMINAL ATMOSPHERIC REENTRY AND PRECISE LANDING
Alessandro Vitiello, GMV-INNOVATING SOLUTIONS SRL, Romania

▶ IAC-21.C1.2.13 (video)

NAVIGATION LANDMARK MATCHING FOR PLANETARY LANDING BASED ON CONTOUR POINT SETS
Shengying Zhu, School of Aerospace Engineering, Beijing Institute of Technology, China

C1.3. Guidance, Navigation & Control (3)

October 26 2021, 14:45 — Sheikh Maktoum C

Co-Chair(s): Miguel Bello Mora, Deimos Space SLU, Spain; Jean de Lafontaine, NGC Aerospace Ltd., Canada;

IAC-21.C1.3.1 (confirmed)

AUTONOMOUS RECONNAISSANCE TRAJECTORY GUIDANCE AT SMALL NEAR-EARTH ASTEROIDS USING REINFORCEMENT LEARNING
Shota Takahashi, University of Colorado Boulder, United States

IAC-21.C1.3.3 (confirmed)

GUIDANCE AND CONTROL IN AUTONOMOUS DEBRIS REMOVAL SPACE MISSIONS VIA ADAPTIVE NONLINEAR MODEL PREDICTIVE CONTROL
Marco Scaffidi Lallaro, Politecnico di Torino, Italy

▶ IAC-21.C1.3.4 (video)

SPACECRAFT TRAJECTORY DESIGN USING DATA-DRIVEN MODEL PREDICTIVE CONTROL
Yuto Hirose, Kyushu University, Japan

▶ IAC-21.C1.3.5 (video)

SOLAR-SAIL CONTROL LAWS FOR PERTURBED EARTH-BOUND TRAJECTORIES
Livio Carzana, Delft University of Technology (TU Delft), The Netherlands

IAC-21.C1.3.6 (confirmed)

A HOMOTOPIC APPROACH FOR ROBUST LOW-THRUST TRAJECTORY DESIGN THROUGH CONVEX OPTIMIZATION
Andrea Carlo Morelli, Politecnico di Milano, Italy

IAC-21.C1.3.8 (confirmed)

CONTROL DESIGN FOR AN ELECTRICAL PROPULSION SYSTEM IN A DRAG-FREE CUBESAT
José Pablo Núñez Martínez, Universidad Panamericana de Ciudad de México, Mexico

IAC-21.C1.3.9 (confirmed)

APPROACHES TO STUDYING THE PERFORMANCE OF SWARM DECENTRALIZED CONTROL ALGORITHMS
Uliana Monakhova, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

IAC-21.C1.3.10 (confirmed)

OPTIMAL COLLISION AVOIDANCE STRATEGIES FOR A SWARM OF NANOSATELLITES IN A REALISTIC SCENARIO
Paolo Iannelli, Sapienza University of Rome, Italy

IAC-21.C1.3.11 (confirmed)

COMBINED STATION-KEEPING, ATTITUDE CONTROL AND MOMENTUM DUMPING STRATEGY FOR A SPACECRAFT IN AN EARTH – MOON L2 HALO ORBIT
Sriianish Vutukuri, Indian Institute of Science, India

IAC-21.C1.3.12 (confirmed)

NONLINEAR SEMI-ANALYTICAL UNCERTAINTY PROPAGATION FOR CONJUNCTION ANALYSIS
Yashica Khatri, Colorado Center for Astrodynamics Research, University of Colorado, United States

C1.4. Mission Design, Operations & Optimization (1)

October 27 2021, 09:45 — Sheikh Maktoum C

Co-Chair(s): Massimiliano Vasile, University of Strathclyde, United Kingdom; Yury Razoumny, Peoples's Friendship University of Russia (RUDN), Russian Federation;

Rapporteur(s): Mauro Pontani, Sapienza University of Rome, Italy; Florian Renk, European Space Agency (ESA), Germany;

IAC-21.C1.4.1 (confirmed)

DEPLOYMENT OF A MICROSATELLITE CONSTELLATION AROUND THE MOON USING CHAOTIC MULTI BODY DYNAMICS.

Khaja Fayaz Hussain, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-21.C1.4.2 (confirmed)

FROM HYPERBOLIC ARRIVAL TO A CYCLER OF THE INNER LARGE MOONS OF SATURN

Adham Alkhaja, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-21.C1.4.3 (confirmed)

MINIMUM-THRUST LUNAR TRAJECTORIES

Sung Wook Yoon, Moscow Aviation Institute (National Research Institute, MAI), Russian Federation

IAC-21.C1.4.4 (confirmed)

MISSION DESIGN AND THE LANDING PLANNING FOR THE "VENERA-D" INTERNATIONAL PROJECT

Alexey Grushevskii, Keldysh Institute of Applied Mathematics of RAS, Russian Federation

IAC-21.C1.4.5 (confirmed)

MISSION DESIGN OF THE VENUS FLAGSHIP DECADAL STUDY

Bruno Sarli, United States

IAC-21.C1.4.6 (confirmed)

LUNAR FROZEN ORBITS FOR SMALL SATELLITE COMMUNICATION/NAVIGATION CONSTELLATIONS

Maksim Shirobokov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

IAC-21.C1.4.7 (confirmed)

META-REINFORCEMENT LEARNING FOR ADAPTIVE SPACECRAFT GUIDANCE DURING MULTI-TARGET MISSIONS

Lorenzo Federici, Sapienza University of Rome, Italy

IAC-21.C1.4.8 (confirmed)

DIRECT OPTIMIZATION FRAMEWORK FOR COLLISION AVOIDANCE OPERATIONS OF LOW-THRUST SATELLITES IN LOW EARTH ORBIT

Axel Garcia-Burgos, Massachusetts Institute of Technology (MIT), United States

IAC-21.C1.4.9 (confirmed)

TWO AND THREE IMPULSES PHASING STRATEGY WITH A SPACECRAFT ORBITING ON A EARTH-MOON NRHO

Giordana Bucchioni, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, France

▣ IAC-21.C1.4.10 (video)

SECOND-ORDER CONE PROGRAMMING BASED MARS POWERED DESCENT TRAJECTORY PLANNING WITH OBSTACLE AVOIDANCE CONSTRAINTS

Jiateng Long, Beijing Institute of Technology, School of Aerospace Engineering, China

C1.5. Mission Design, Operations & Optimization (2)

October 27 2021, 14:45 — Sheikh Maktoum C

Co-Chair(s): Stéphanie Lizy-Destrez, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France; Michèle Lavagna, Politecnico di Milano, Italy;

Rapporteur(s): Florian Renk, European Space Agency (ESA), Germany; Florian Renk, European Space Agency (ESA), Germany;

IAC-21.C1.5.1 (confirmed)

MISSION DESIGN OF DESTINY+: TOWARD ACTIVE ASTEROID (3200) PHAETHON

Naoya Ozaki, ISAS/JAXA, Japan

IAC-21.C1.5.2 (confirmed)

MARTIAN MOONS EXPLORATION TRANSFER ANALYSIS BETWEEN PLANAR AND SPATIAL QSOs AROUND PHOBOS

Nishanth Pushparaj, The Graduate University for Advanced Studies, Japan

IAC-21.C1.5.3 (confirmed)

CONSTRAINED MULTI-OBJECTIVE SPACE TRAJECTORY OPTIMISATION UNDER SEVERE SYSTEM AND OPERATIONAL UNCERTAINTY

Simão Marto, University of Strathclyde, United Kingdom

IAC-21.C1.5.4 (confirmed)

OPTIMAL FLIGHT TRAJECTORIES TO TRANS-NEPTUNIAN OBJECT (90377) SEDNA

Vladislav Zubko, Space Research Institute (IKI), Russian Academy of Sciences (RAS), Russian Federation

▣ IAC-21.C1.5.5 (video)

ROUND-TRIP TRAJECTORIES BETWEEN EARTH-MOON NRHOs AND HELIOCENTRIC SPACE IN THE EARTH-MOON-SUN SYSTEM

Kenza Boudad, Purdue University, United States

IAC-21.C1.5.6 (confirmed)

A LOW-THRUST LUNAR CYCLER OF THE MOONS OF SATURN

Burhani Burhani, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-21.C1.5.7 (confirmed)

EFFICIENCY OF TREE-SEARCH LIKE HEURISTICS TO SOLVE COMPLEX MIXED-INTEGGER PROGRAMMING PROBLEMS APPLIED TO SPACE TRAJECTORY DESIGN

Andrea Bellome, Cranfield University, UK, United Kingdom

IAC-21.C1.5.8 (confirmed)

MULTI-DISCIPLINARY OPTIMIZATION OF THE LOW-THRUST ORBIT RAISING FOR THE HYDROTERRA EARTH EXPLORER MISSION

David Morante, Deimos Space SL, Spain

IAC-21.C1.5.11 (confirmed)

ROBUST MULTI-OBJECTIVE TRAJECTORY OPTIMIZATION IN THE CR3BP

Jose Tatay-Sanguesa, Astos Solutions GmbH, Germany

IAC-21.C1.5.12 (confirmed)

OPTIMAL LOW-THRUST ORBIT TRANSFERS WITH SHADOWING EFFECT USING A MULTIPLE-ARC FORMULATION

Mauro Pontani, Sapienza University of Rome, Italy

C1.6. Orbital Dynamics (1)

October 28 2021, 09:45 — Sheikh Maktoum C

Co-Chair(s): Ai Canghuala, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Feng-Tai Hwang, National Space Organization, Taipei;

Rapporteur(s): Yuichi Tsuda, Japan Aerospace Exploration Agency (JAXA), Japan;

IAC-21.C1.6.1 (confirmed)

KEYNOTE: ON PERTURBATION SOLUTIONS IN THE RESTRICTED THREE-BODY PROBLEM DYNAMICS

Martin Lara, Universidad de La Rioja, Spain

IAC-21.C1.6.2 (confirmed)

EARTH-MARS MICROSATELLITE MISSIONS USING BALLISTIC CAPTURE AND LOW-THRUST PROPULSION

Stefano Carletta, Sapienza University of Rome, Italy

IAC-21.C1.6.4 (confirmed)

CISLUNAR ESCAPE TRAJECTORIES THROUGH PATCHED SUN-EARTH/EARTH-MOON THREE-BODY PROBLEM

Andrea Pasquale, Politecnico di Milano, Italy

IAC-21.C1.6.5 (confirmed)

EJECTA DYNAMICS AROUND ASTEROIDS IN VIEW OF IN-ORBIT PARTICLE COLLECTION MISSIONS

Mirko Trisolini, Politecnico di Milano, Italy

IAC-21.C1.6.6 (confirmed)

ORBIT DETERMINATION USING GROUND-BASED OPTICAL OBSERVATIONS IN LAUNCH AND EARLY OPERATIONS PHASE OF EDRS-C

Stefan Hackel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.C1.6.8 (confirmed)

THE STATE TRANSPORT AND TRANSITION MATRIX IN THE GENERAL KEPLERIAN RELATIVE ORBITAL MOTION

Daniel Condurache, Technical University of Iasi, Romania

IAC-21.C1.6.9 (confirmed)

SMALL-BODY GRAVITATIONAL MODELING FOR ON-BOARD OPERATIONS AND MASS DISTRIBUTION ESTIMATION: TRADE-OFF ANALYSIS AND NOVEL APPROACH

Juan Garcia-Bonilla, Delft University of Technology, Spain

IAC-21.C1.6.10 (confirmed)

A STABLE HELIOCENTRIC DISPOSAL STRATEGY FOR LPO MISSIONS, INSPIRED BY THE NATURAL CO-ORBITAL MOTION OF SATURN'S MOONS

Elisa Maria Alessi, Consiglio Nazionale delle Ricerche (CNR), Italy

IAC-21.C1.6.11 (video)

BALLISTIC LUNAR TRANSFER DESIGN TO ACCESS CISLUNAR PERIODIC AND QUASI-PERIODIC ORBITS LEVERAGING FLYBYS OF THE MOON

Brian McCarthy, Purdue University, United States

IAC-21.C1.6.13 (confirmed)

FAST CHAOS EXPANSIONS OF DIFFUSIVE AND SUB-DIFFUSIVE PROCESSES IN ORBITAL MECHANICS

Massimiliano Vasile, University of Strathclyde, United Kingdom

C1.7. Orbital Dynamics (2)

October 28 2021, 14:45 — Sheikh Maktoum C

Co-Chair(s): Xiaoqian Chen, National Innovation Institute of Defense Technology, Chinese Academy of Military Science, China;

Rapporteur(s): David C. Folta, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States;

IAC-21.C1.7.1 (confirmed)

ANALYSIS OF THE ROBUSTNESS AND MISSION PERFORMANCE OF A CUBESAT ORBITING A BINARY ASTEROID SYSTEM.

Iosto Fodde, University of Strathclyde, The Netherlands

IAC-21.C1.7.2 (confirmed)

IMPROVING EFFICIENCY OF ANALYTIC ORBIT PROPAGATION

Martin Lara, Universidad de La Rioja, Spain

IAC-21.C1.7.3 (video)

FUEL-FREE FORMATION FLIGHT FOR INTERFERENCE OBSERVATION AROUND THE SUN-EARTH L2 POINT USING SOLAR RADIATION PRESSURE

Keisuke Sugiura, Aoyama Gakuin University, Japan

IAC-21.C1.7.4 (confirmed)

ASSESSMENT OF HYBRID MACHINE LEARNING APPLICATIONS ON TRAJECTORIES IN THE CR3BP

Hodei Urrutxua, Universidad Rey Juan Carlos, Spain

IAC-21.C1.7.5 (video)

IDENTIFYING UNDERLYING STRUCTURES IN ASTRODYNAMICS WITH THE DATA-DRIVEN HAVOK ANALYSIS

Roger Gutierrez-Ramon, The Graduate University for Advanced Studies, Japan

IAC-21.C1.7.6 (confirmed)

EXPLOITATION OF SRP-J2-PHI RESONANCES FOR DE-ORBITATION OF SPACE OBJECTS WITH TIME-VARIANT AREA-TO-MASS RATIO

Catherine Massé, McGill University, Canada

IAC-21.C1.7.7 (video)

ORBITAL TRANSFER BETWEEN INVARIANT MANIFOLDS IN THE CIRCULAR RESTRICTED FOUR-BODY PROBLEM

Yuki Okumura, Nihon University, Japan

IAC-21.C1.7.8 (confirmed)

KEPLERIAN MAP THEORY FOR HIGH-FIDELITY PREDICTION OF THE THIRD-BODY PERTURBATIVE EFFECT

Lorenzo Giudici, Politecnico di Milano, Italy

IAC-21.C1.7.10 (video)

ANALYSIS OF BALLISTIC ESCAPE BASED ON LOBE DYNAMICS

Naoki Hiraiwa, Kyushu University, Japan

IAC-21.C1.7.13 (confirmed)

PROBABILITY OF SPACECRAFT'S CAPTURE INTO RESONANCE AROUND ASTEROIDS EXPLOITING THE ADIABATIC INVARIANT THEORY.

Wail Boumchita, University of Strathclyde / Mechanical and Aerospace Engineering, United Kingdom

C1.8. Attitude Dynamics (1)

October 29 2021, 09:45 — Sheikh Maktoum C

Co-Chair(s): Shinji Hokamoto, Kyushu University, Japan; Giovanni B. Palmerini, Sapienza University of Rome, Italy;

Rapporteur(s): Robert G. Melton, Pennsylvania State University, United States;

IAC-21.C1.8.1 (confirmed)

THE LISA DFACS: EFFECTS OF MICRO-METEOROID IMPACTS IN THE DRAG-FREE MODE

Michele Pagone, Politecnico di Torino, Italy

IAC-21.C1.8.2 (confirmed)

VISUAL SERVOING FOR COORDINATED PRECISE ATTITUDE CONTROL IN THE TOM SMALL SATELLITE FORMATION

Johannes Dauner, Zentrum für Telematik, Germany

IAC-21.C1.8.3 (confirmed)

ATTITUDE DYNAMICS AND OPERATION RESULT IN HAYABUSA2 CAPSULE REENTRY

Kent Yoshikawa, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-21.C1.8.4 (confirmed)

MAGNETICALLY CONTROLLABLE ATTITUDE TRAJECTORY CONSTRUCTED USING THE PARTICLE SWARM OPTIMIZATION METHOD

Anna Okhitina, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

IAC-21.C1.8.6 (confirmed)

DETERMINATION AND MITIGATION OF THE RESIDUAL MAGNETIC DIPOLE MOMENT OF CUBESATS FOR IMPROVED ATTITUDE STABILITY

Abdelmadjid Lassakeur, Agence Spatiale Algérienne (ASAL), Algeria

IAC-21.C1.8.7 (confirmed)

DEVELOPMENT AND ANALYSIS OF A PITCH SUN TRACKING ATTITUDE MODE FOR THE 2U CUBESAT ORCASAT

Zeno Pavanello, University of Padova, DII / CISAS – “G. Colombo”, Italy

IAC-21.C1.8.8 (confirmed)

DECENTRALISED ANTI-WINDUP FAULT TOLERANT CONTROL DESIGN FOR SATELLITE ATTITUDE STABILIZATION

Ikechukwu Ofodile, Univeristy of Tartu, Estonia

- IAC-21.C1.8.9 (video)**
 UNWINDING AND SINGULARITY FREE SATELLITE ATTITUDE CONTROL USING DOUBLE-GIMBAL VARIABLE-SPEED CONTROL MOMENT GYRO AND SLIDING CONTROL
Gargi Das, Indian Institute of Technology Kharagpur, India

- IAC-21.C1.8.12 (video)**
 ATTITUDE CONTROL OF A NANOSATELLITE USING INVERSE SIMULATION
Robert Gordon, School of Engineering, University of Glasgow, United Kingdom

C1.9. Attitude Dynamics (2)

October 29 2021, 13:30 — Sheikh Maktoum C

Co-Chair(s): Gianmarco Radice, , Singapore, Republic of; Toshio Kamiya, NEC Corporation, Japan;

Rapporteur(s): Zhanfeng Meng, China Academy of Space Technology (CAST), China;

- IAC-21.C1.9.1 (confirmed)**
 EXPLOITING CORIOLIS ACCELERATION TO REDUCE LIBRATION OSCILLATIONS DURING RETRACTION OF TETHERED SATELLITE SYSTEMS
Derek Bourabah, University at Buffalo, United States

- IAC-21.C1.9.2 (confirmed)**
 MULTI-AGENT ATTITUDE TASK ALLOCATION AND CONTROL IN A SWARM OF MAGNETICALLY CONTROLLED CUBESATS
Ahmed Mahfouz, University of Luxembourg, Luxembourg

- IAC-21.C1.9.3 (video)**
 DYNAMIC MOTION PLANNING FOR SATELLITE ATTITUDE MANEUVER UNDER ATTITUDE CONSTRAINTS USING FUZZY POTENTIAL FIELD
Fengwen Wang, China

- IAC-21.C1.9.4 (confirmed)**
 IMPLEMENTATION AND TESTING OF A PASSIVE MAGNETIC ATTITUDE CONTROL SYSTEM FOR THE 3U ASTROBIO CUBESAT ORBITING IN THE VAN ALLEN BELT
Stefano Carletta, Sapienza University of Rome, Italy

- IAC-21.C1.9.5 (confirmed)**
 THREE-AXIS ATTITUDE CONTROL OF AGILE SATELLITE USING FRACTIONAL ORDER PROPORTIONAL-DERIVATIVE CONTROLLER
Debajyoti Chakrabarti, ISRO Satellite Centre (ISAC), India

- IAC-21.C1.9.6 (confirmed)**
 RETRIEVAL STRATEGIES FOR TETHERED SATELLITES
Giulia Sarego, University of Padova, CISAS – “G. Colombo” Center of Studies and Activities for Space, Italy

- IAC-21.C1.9.7 (confirmed)**
 ATTITUDE DETERMINATION AND CONTROL SYSTEM OF SHARJAH-SAT-1
Mohamed BinAshour, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

- IAC-21.C1.9.8 (confirmed)**
 APPROACHES TO OPTIMAL CONTROL OF FLUID-DYNAMIC ACTUATED SMALL SATELLITES
Adrian Fried, Technische Universität Berlin, Germany

- IAC-21.C1.9.9 (video)**
 HIGH PRECISION SATELLITE ATTITUDE CONTROL USING DOUBLE-GIMBAL VARIABLE-SPEED CONTROL MOMENT GYRO WITH UNBALANCED ROTOR
Saumitra Barman, Indian Institute of Technology Kharagpur, India

- IAC-21.C1.9.10 (video)**
 ATTITUDE CONTROL OF UNDER-ACTUATED SATELLITE FOR GROUND MOVING TARGET ORIENTATION
Ning Cao, National Key Laboratory of Aerospace Flight Dynamics, Northwestern Polytechnical University, Xi'an, China, China

- IAC-21.C1.9.11 (confirmed)**
 ATTITUDE DETERMINATION AND CONTROL SYSTEM TESTBED FOR HARDWARE AND SOFTWARE TESTING AND VALIDATION FOR HYPSON SMALL SATELLITES
Jørgen Anker Olsen, Norwegian University of Science and Technology, Norway

- IAC-21.C1.9.12 (confirmed)**
 EFFECT OF REACTION WHEELS DISBALANCES ON THE SPACECRAFT STABILIZATION ACCURACY
Yaroslav Mashtakov, Keldysh Institute of Applied Mathematics of RAS, Russian Federation

C1.IP. Interactive Presentations - IAF ASTRODYNAMICS SYMPOSIUM

Co-Chair(s): Massimiliano Vasile, University of Strathclyde, United Kingdom; Anton de Ruiter, Ryerson University, Canada;
Rapporteur(s): Florian Renk, European Space Agency (ESA), Germany;

- IAC-21.C1.IP.1 (confirmed)**
 A NOVEL APPROACH FOR DYNAMICS MODELLING, ANALYSIS AND SIMULATION OF BOOM MOUNTED REFLECTOR DEPLOYMENT PROCESS FOR SWEEPSAR IMAGING SATELLITES
ASHOK KUMAR K, U R RAO SATELLITE CENTRE (URSC), India

- IAC-21.C1.IP.2 (video)**
 AN ON-ORBIT CALIBRATION METHOD OF LOAD AND TRACKING EQUIPMENT FOR SPACE-BASED SATELLITE PLATFORM
Xiao LIU, Shanghai Aerospace Control Technology Institute (SACTI), China

- IAC-21.C1.IP.4 (confirmed)**
 A REVIEW ON TRAJECTORY DESIGNS OF POTENTIAL ASTEROID MINING TARGETS
Dhruvil Patadia, National Institute of Technology Hamirpur, India

- IAC-21.C1.IP.5 (confirmed)**
 FLEXIBLE RECONFIGURATION FOR FORMATION FLYING SPACECRAFT WITH FUEL BALANCING
Karthick Dharmarajan, University of Rome “La Sapienza”, Italy

- IAC-21.C1.IP.13 (video)**
 TIME-SYNCHRONIZED ATTITUDE TRACKING DURING RENDEZVOUS AND DOCKING MANEUVERS
Yufeng Gao, Harbin Institute of Technology, China

- IAC-21.C1.IP.14 (video)**
 REINFORCEMENT LEARNING ATTITUDE CONTROLLER DESIGN BASED ON PID CONTROL FOR VARIABLE CONFIGURATION
Wang Ran, Institute of Telecommunication Satellite, China Academy of Space Technology, China

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 25 2021, 15:15 — Rais Al Khaimah

Co-Chair(s): Alwin Eisenmann, IABG Industrieanlagen - Betriebsgesellschaft mbH, Germany; Andreas Rittweger, DLR (German Aerospace Center), Germany;
Rapporteur(s): Jochen Albus, ArianeGroup, Germany;

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25-29 October 2021 | Dubai, United Arab Emirates

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IAC-21.C2.1.1 (confirmed)

THERMAL VACUUM AND BALANCE TEST METHOD AND VALIDATION ON OPTICAL PAYLOAD

Mohamed Alsalamy, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

▣ IAC-21.C2.1.3 (video)

STRUCTURE MODELLING AND OPTIMAL CONFIGURATION OF A MICROSATELLITE IN EQUATORIAL ORBIT

Poki Agung Budiantoro, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

IAC-21.C2.1.4 (confirmed)

SIERRA NEVADA CORPORATION'S LIFE SOFTGOODS CERTIFICATION

Jeffrey Valania, Sierra Space, United States

▣ IAC-21.C2.1.6 (video)

CROSS-LONGITUDINAL REINFORCEMENT DESIGN FOR THIN STRUCTURES IN AEROSPACE INSPIRED BY DRAGONFLY WING

Hiroki Kawabe, The University of TOKYO, Graduate school, Japan

IAC-21.C2.1.7 (confirmed)

A GLOBAL-LOCAL APPROACH FOR THE FREE-EDGE ANALYSIS OF COMPOSITE STRUCTURES UNDER THERMAL LOADS

Enrico Zappino, Politecnico di Torino, Italy

IAC-21.C2.1.8 (confirmed)

THERMAL INSULATION FOAM FOR THE HIGH PRECISION THERMAL MODELING OF SPACE SATELLITES

Nikolay Mullin, Skolkovo Institute of Science and Technology, Russian Federation

▣ IAC-21.C2.1.9 (video)

EVALUATION OF SHAPE AND SOLAR RADIATION TORQUE OF BOOM EXTENDABLE MEMBRANE STRUCTURE WITH DEVICES

Ayaka Fujita, Tokai University, Japan

IAC-21.C2.1.12 (confirmed)

DESIGN AND QUALIFICATION OF A LIGHTWEIGHT PAYLOAD MODULE OPTIMIZED FOR PAYLOAD AND AIT FLEXIBILITY

Nima Jafarzadeh Aghdam, RWTH Aachen University, Germany

C2.2. Space Structures II - Development and Verification (Deployable and Dimensionally Stable Structures)

October 26 2021, 09:45 — Rais Al Khaimah

Co-Chair(s): Paolo Gasbarri, Sapienza University of Rome, Italy; Oliver Kunz, RUAG Space, Switzerland;

Rapporteur(s): Aicke Patzelt, MT Aerospace AG, Germany; Thomas Sinn, Deployables Cubed GmbH, Germany;

IAC-21.C2.2.1 (confirmed)

GLOBAL/LOCAL AND ADVANCED MULTI-SCALE SIMULATION OF COMPOSITE TRAC BOOMS

Alfonso Pagani, Politecnico di Torino, Italy

IAC-21.C2.2.4 (confirmed)

AN ATTITUDE/SPIN CONTROL ARCHITECTURE FOR A SPACECRAFT EQUIPPED WITH A FLEXIBLE ROTATING PAYLOAD BASED ON MODEL PREDICTIVE CONTROL

Paolo Iannelli, Sapienza University of Rome, Italy

IAC-21.C2.2.6 (confirmed)

POWER CUBE: APPLICATIONS, DESIGN, BREADBOARDING AND ROADMAP OF A 1U DEPLOYABLE 100W NANOSAT SOLAR ARRAY

Thomas Sinn, Deployables Cubed GmbH, Germany

▣ IAC-21.C2.2.8 (video)

DEPLOYMENT SIMULATION OF SOLAR SAIL WITH ROTATIONALLY SKEW FOLDING : PARAMETRIC ANALYSIS BY DEPLOYMENT STRUCTURE CONFIGURATION

Shuhei Yamada, University of Tokyo, Japan

▣ IAC-21.C2.2.10 (video)

COMPARATIVE STUDY OF NON-LINEAR ANALYSIS TOOLS FOR RELEASE SIMULATIONS OF CLAMPBAND-JOINT SEPARATION SYSTEMS

Antonia Grethen-Bußmann, Luleå University of Technology, Sweden

IAC-21.C2.2.11 (confirmed)

EXPERIMENTAL VALIDATION OF DEPLOYABLE TAPE SPRING HINGE EMBEDDED WITH SURPERPLASTIC SHAPE MEMORY ALLOY

Ji Seong Go, Chosun University, Korea, Republic of

▣ IAC-21.C2.2.12 (video)

ON-ORBIT MANUFACTURING OF LARGE SPACE STRUCTURES USING SOLID FOAMS

Peter G.B. Hastie, University of Glasgow, United Kingdom

C2.3. Space Structures - Dynamics and Microdynamics

October 26 2021, 14:45 — Rais Al Khaimah

Co-Chair(s): Ijar Da Fonseca, ITA-DCTA, Brazil; Harijono Djojodihardjo, Indonesia;

Rapporteur(s): Paolo Gasbarri, Sapienza University of Rome, Italy;

IAC-21.C2.3.1 (confirmed)

SOLAR PANEL AND ATTITUDE CONTROL DESIGN FOR AN AUTONOMOUS TABLE-TOP EMULATOR (KNATTE)

Elena Fernández Bravo, Luleå University of Technology, Sweden

▣ IAC-21.C2.3.2 (video)

DEPLOYMENT DYNAMICS OF A TIGHTLY PACKED MEMBRANE TAKING INTO ACCOUNT MEMBRANE ENTANGLEMENT

Shuhei Yamada, University of Tokyo, Japan

▣ IAC-21.C2.3.3 (video)

IMPACT ENVIRONMENT ANALYSIS OF SPACECRAFT-ROCKET SEPARATION FOR NEW GENERATION MANNED SPACECRAFT

Zhao Yin, Beijing Institute of Spacecraft System Engineering, China Academy of Space Technology (CAST), China

IAC-21.C2.3.4 (confirmed)

A GENERAL CONTROL/STRUCTURE CO-DESIGN FRAMEWORK TO OPTIMIZE ATTITUDE/FLEXIBLE DYNAMICS OF EARTH OBSERVATION (EO) SATELLITES

Federica Angeletti, University of Rome "La Sapienza", Italy

▣ IAC-21.C2.3.5 (video)

DYNAMIC MODELING AND FINITE-TIME CONTROL STUDY FOR FREE-FLOATING SPACE ROBOTS WITH ELASTIC BASE, ELASTIC JOINTS AND FLEXIBLE LINKS

Haiping Ai, Fuzhou University, China

▣ IAC-21.C2.3.6 (video)

A MULTIVARIATE STUDY OF THE STABILITY OF TOROIDAL THIN-WALLED STRUCTURES CONTAINING LIQUID

SongYi Park, Moscow Aviation Institute (National Research University, MAI), Russian Federation

IAC-21.C2.3.7 (confirmed)

TRAJECTORY GENERATION FOR AN ON-ORBIT ROBOT MANIPULATOR

Ijar Da Fonseca, ITA-DCTA, Brazil

▣ IAC-21.C2.3.8 (video)

RELATIVE ANGLE CONTROL CONSIDERING FRICTION OF THE DRIVE HINGE OF A SPACECRAFT COMPOSED OF MULTIPLE PANELS

Kotaro Ikeda, Aoyama Gakuin University, Japan

IAC-21.C2.3.9 (confirmed)

STRUCTURAL AND VIBRATIONAL ANALYSIS OF STRUCTURE OF A 3U CUBESAT

Aahan Shah, Birla Institute of Technology and Science (BITS), India

IAC-21.C2.3.10 (confirmed)

SOUNDING ROCKET VIBRATION MECHANICAL FILTER AND AMPLIFIER

Adam Dąbrowski, Gdansk University of Technology, Poland

IAC-21.C2.3.12 (video)

REACTIONLESS TIME DELAY ESTIMATION BASED ADAPTIVE FUZZY SLIDING MODE CONTROL OF A SPACE MANIPULATOR APPROACHING A ROTATING TARGET

Xiaoyan Yu, Fuzhou University, China

C2.4. Advanced Materials and Structures for High Temperature Applications

October 27 2021, 09:45 — Rais Al Khaimah

Co-Chair(s): Marc Lacoste, ArianeGroup, France; David E. Glass, National Aeronautics and Space Administration (NASA), United States; Thierry Pichon, ArianeGroup, France;

Rapporteur(s): Zijun Hu, China Academy of Launch Vehicle Technology (CALT), China;

IAC-21.C2.4.1 (confirmed)

OBTENTION OF A CARBON-CARBON COMPOSITE MATERIAL FOR ITS USE IN EXPANDING NOZZLES FOR AEROSPACE VEHICLES.

Liliana Maricarmen Ramírez Lopez, Universidad Aeronáutica en Querétaro, Mexico

IAC-21.C2.4.3 (confirmed)

DEVELOPMENT AND FLIGHT TEST OF A SUBORBITAL RE-ENTRY DEMONSTRATOR

Francesco Punzo, ALI S.c.a.r.l., Italy

IAC-21.C2.4.6 (confirmed)

ANISOTROPIC HEAT-SHIELDING MATERIALS: EVALUATION OF EFFECTIVENESS IN CASE OF A RE-ENTRY MODULE

Victor Leonov, Bauman Moscow State Technical University, Russian Federation

IAC-21.C2.4.7 (confirmed)

ADVANCED MATERIALS FOR THERMAL MANAGEMENT OF SUPERCONDUCTOR-BASED SPACECRAFT SYSTEMS

Marcus Collier-Wright, Neutron Star Systems UG, Germany

IAC-21.C2.4.8 (confirmed)

EXPERIMENTAL AND NUMERICAL STUDIES OF MHD EFFECTS ON PLASMA FLOWS FOR RE-ENTRY APPLICATIONS

Jasmine Giacomelli, Institute of Space Systems, Universität Stuttgart, Germany

IAC-21.C2.4.9 (confirmed)

THE IMPLEMENTATION OF THE ALGINATE MONTMORILLONITE NANOCOMPOSITE FOAM INTO HEAT SHIELDS

Esmée Menting, Delft University of Technology (TU Delft), The Netherlands

C2.5. Advancements in Materials Applications and Rapid Prototyping

October 27 2021, 14:45 — Rais Al Khaimah

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-21.C2.5.3 (confirmed)

DESIGN AND DEVELOP ADVANCED ROBOTIC CONTOUR CRAFTING PROCESS

SANDHYA RAO, India

IAC-21.C2.5.4 (video)

INVESTIGATION OF ADDITIVELY MANUFACTURED STRUCTURALLY INTEGRATED HEATPIPER FOR CUBESATS

Konstantin Kappe, Fraunhofer EMI, Germany

IAC-21.C2.5.5 (video)

MULTI-CRITERIA DECISION-MAKING PROCESS IN ORDER TO SELECT AND REDESIGN A SATELLITE COMPONENT IN LINE WITH ADDITIVE MANUFACTURING LOGICS

Marco Eugeni, Sapienza University of Rome, Italy

IAC-21.C2.5.6 (confirmed)

NANOSATELLITE ADDITIVE MANUFACTURED STRUCTURE - DESIGN AND ANALYSIS

Pedro Neto, University of Beira Interior, Portugal

IAC-21.C2.5.7 (confirmed)

ADDITIVE MANUFACTURING: SCIENTIFIC & PATENT TRENDS IN THE SPACE SECTOR

Tanya Scalia, Italian Space Agency (ASI), Italy

IAC-21.C2.5.8 (confirmed)

ADDITIVE MANUFACTURING OF RADIATION SHIELDING FOR SMALL SATELLITES

Simon Huembert, German Aerospace Center (DLR), Germany

IAC-21.C2.5.9 (confirmed)

DESIGN AND THERMAL ANALYSIS OF 3D PRINTED ROCKET COMPONENTS

Akshat Mohite, Spaceonova, India

IAC-21.C2.5.10 (confirmed)

NOVEL LITHOGRAPHIC PRINTING TECHNIQUES ENABLING SUSTAINABLE AND HIGH QUALITY MULTI MATERIAL MANUFACTURING PROCESS FOR FUTURE SPACE OUTPOSTS

Antonella Sgambati, OHB System AG-Bremen, Germany

IAC-21.C2.5.11 (confirmed)

TOPOLOGICAL OPTIMIZATION OF HONEYCOMB SANDWICH PANELS MADE FROM PRINTED CORE AND LAMINATED FACES

Mateus Sant'Ana, University of Brasilia, Brazil

IAC-21.C2.5.12 (confirmed)

POST-FLIGHT ANALYSIS OF HAYABUSA2 SAMPLE RETURN CAPSULE

Tetsuya Yamada, Japan Aerospace Exploration Agency (JAXA), Japan

C2.6. Space Environmental Effects and Spacecraft Protection

October 28 2021, 09:45 — Rais Al Khaimah

Co-Chair(s): Antonio Del Vecchio, 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-21.C2.6.1 (confirmed)

EFFECTS OF SPACE THERMAL-VACUUM CONDITIONS ON THE ELECTROMAGNETIC REFLECTIVITY OF SMALL SATELLITES STRUCTURAL PLATES

Andrea Delfini, Sapienza University of Rome, Italy

IAC-21.C2.6.2 (confirmed)

TEST CAMPAIGN TO DETERMINE THE PROPERTIES AND SPACE DURABILITY OF AN ELECTRODYNAMIC LOW WORK FUNCTION TETHER

Willy Stark, TU Dresden, Germany

IAC-21.C2.6.3 (confirmed)

MITIGATING LUNAR DUST ON SPACECRAFT SURFACES USING ELECTROMAGNETIC FIELDS

Owen Welch, BLUECUBE Aerospace, United States

IAC-21.C2.6.5 (video)

THE RADIATION ENVIRONMENT AND EFFECTS ANALYSIS OF THE LUMIO MISSION.

Alessandra Menicucci, Delft University of Technology (TU Delft), The Netherlands

IAC-21.C2.6.6 (confirmed)

WHIPPLE SHIELDING SPACECRAFT USING NI-TI SHAPE MEMORY ALLOY AND AEROGEL COMPOSITE.

Pradnesh Mhatre, University of Pune, India

▶ IAC-21.C2.6.7 (video)

SHIELDING EVALUATION OF POLYETHYLENE/REGOLITH COMPOSITES IN THE MARTIAN RADIATION ENVIRONMENT

Federica Zaccardi, Sapienza University of Rome, Italy

IAC-21.C2.6.8 (confirmed)

EARLY RESULTS FROM THE DISCOVERER PROJECT

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

IAC-21.C2.6.9 (confirmed)

HEATING OF TELESCOPE STRUCTURE DUE TO REFLECTED SUNLIGHT FROM TELESCOPE OPTICS

Ali Alzaabi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.C2.6.10 (confirmed)

AEROGEL BASED THERMAL INSULATION AND UV RESISTANT SYSTEM FOR MOON AND MARS SETTLEMENT

Heet Naik, University of Mumbai, India

IAC-21.C2.6.11 (confirmed)

THE MODELLING OF THE DEGRADATION AND LIFETIME ESTIMATION FOR THE GEO SATELLITES SURFACE MATERIAL BY ITS PHOTOMETRIC OBSERVATIONS AND LABORATORY DATA

Chingiz Akniyazov, Fesenkov Astrophysical Institute, Kazakhstan

IAC-21.C2.6.12 (confirmed)

DETERMINATION OF SPACECRAFT ATTITUDE BASED ON THE HEAT FLUX ANALYSIS

Evgeny Chebakov, Moscow Aviation Institute (National Research Institute, MAI), Russian Federation

C2.7. Space Vehicles – Mechanical/Robotic/Thermal/Fluidic Systems

October 28 2021, 14:45 — Rais Al Khaimah

Co-Chair(s): Brij Agrawal, Naval Postgraduate School, United States; Oleg Alifanov, MAI, Russian Federation;

Rapporteur(s): Guoliang Mao, Beijing Institute of Aerodynamics, China;

IAC-21.C2.7.3 (confirmed)

THERMAL DESIGN OF CRYOGENIC COOLER BY USING GRAPHITE SHEET FOR ENHANCEMENT OF MICRO-VIBRATION ISOLATION PERFORMANCE

Min-Yong Son, Chosun University, Korea, Republic of

▶ IAC-21.C2.7.5 (video)

CONCURRENT ENGINEERING APPROACH IN PRELIMINARY DESIGN OF A MULTI-PURPOSE MODULE FOR A LAUNCH SYSTEM

Marco Eugeni, Sapienza University of Rome, Italy

IAC-21.C2.7.6 (confirmed)

IDENTIFICATION OF THE GAS PROPERTIES BY MEASURING THE HEAT FLOW

Alena V. Morzhukhina, Moscow Aviation Institute (National Research Institute, MAI), Russian Federation

▶ IAC-21.C2.7.8 (video)

PROPOSAL AND EVALUATION FOR PASSIVE TEMPERATURE STABILIZATION SYSTEM FOR BATTERY PERFORMANCE MANAGEMENT

Kikuko Miyata, Meijo University, Japan

IAC-21.C2.7.11 (confirmed)

A DEVICE FOR MEASURING HEAT FLUX ON A ROCKET SKIN SURFACE

Adam Dqbrowski, Gdansk University of Technology, Poland

IAC-21.C2.7.12 (confirmed)

THERMAL MANAGEMENT SYSTEM DESIGN AND ANALYSIS OF RASHID ROVER - EMIRATES LUNAR MISSION

Reem Almehisni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.C2.7.13 (confirmed)

SUSPENSION SYSTEM DESIGN AND ANALYSIS OF RASHID ROVER

Amna Busoud, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

C2.8. Specialized Technologies, Including Nanotechnology

October 29 2021, 09:45 — Rais Al Khaimah

Co-Chair(s): Mario Marchetti, Associazione Italiana di Aeronautica e Astronautica (AIDAA), Italy; Pierre Rochus, CSL (Centre Spatial de Liège), Belgium;

Rapporteur(s): Bangcheng Ai, China Aerospace Science and Industry Corporation, China;

IAC-21.C2.8.2 (confirmed)

DETERMINATION OF THERMOPHYSICAL PROPERTIES OF C/C PLATES WITH CERAMIC NANO-COATING OF DIFFERENT THICKNESS FOR AEROSPACE APPLICATIONS

Alena V. Morzhukhina, Moscow Aviation Institute (National Research Institute, MAI), Russian Federation

▶ IAC-21.C2.8.4 (video)

MICROFABRICATION AND FUNCTIONALIZATION OF POLYMERIC MATERIAL SURFACES UTILIZING ATOMIC OXYGEN BEAM

Keiichi Yanagase, Japan Aerospace Exploration Agency (JAXA), Japan

C2.9. Smart Materials and Adaptive Structures

October 29 2021, 13:30 — Rais Al Khaimah

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-21.C2.9.1 (video)

BATTERY-LESS SOFT SENSOR OF SPACECRAFT VIBRATION WITH ADVANCED PIEZOELECTRIC ENERGY HARVESTER

Yushin HARA, Tohoku University, Japan

IAC-21.C2.9.2 (confirmed)

NUMERICAL MODELLING AND EXPERIMENTS OF A VIBRATION SUPPRESSION SOLUTION VIA OFFSET PIEZOELECTRIC STACK ACTUATORS FOR SPACE STRUCTURES

Federica Angeletti, University of Rome "La Sapienza", Italy

▶ IAC-21.C2.9.3 (video)

ENVIRONMENTAL ANALYSIS AND OPTIMISATION OF AN IN-ORBIT SHAPE MEMORY ALLOY DEPLOYMENT MECHANISM

Chris Wright, University of the West of England (UWE), United Kingdom

IAC-21.C2.9.4 (confirmed)

UTILIZATION OF SHAPE MEMORY ALLOYS FOR MULTI-PURPOSE DEPLOYABLE SOLAR PANELS

Kaushik Aryan, R V College of Engineering, Bengaluru, India

IAC-21.C2.9.6 (confirmed)

PASSIVE VIBRATION SUPPRESSION OF SOLAR ARRAY BY USING HYPERELASTIC SHAPE MEMORY ALLOY

Jae-Hyeon Park, Chosun University, Korea, Republic of

- IAC-21.C2.9.9 (video)**
 SMART MANUFACTURING IN THE SPACE INDUSTRY. A CYBER-PHYSICAL SYSTEM ARCHITECTURE AND ITS IMPLEMENTATION TO A MAIT PROCESS FOR MEGA CONSTELLATIONS OF SATELLITES
Marco Eugeni, Sapienza University of Rome, Italy
- IAC-21.C2.9.10 (video)**
 MODEL PREDICTIVE CONTROL FOR SWITCHING VIBRATION SUPPRESSION USING FUTURE TRAJECTORY
Kanjuro MAKIHARA, Tohoku University, Japan

C2.IP. Interactive Presentations - IAF MATERIALS AND STRUCTURES SYMPOSIUM

October 28 2021, 13:15 — IP Area

Co-Chair(s): Paolo Gasbarri, Sapienza University of Rome, Italy; Andreas Rittweger, DLR (German Aerospace Center), Germany;

IAC-21.C2.IP.1 (confirmed)
 DESIGN AND PROTOTYPING OF NOVEL ANTENNA DEPLOYMENT SYSTEM FOR CUBESATS
Kartkey Srivastava, Birla Institute of Technology and Science (BITS), India

IAC-21.C2.IP.2 (confirmed)
 A MECHANICS-BASED DERIVATION OF THE SHELL-LIKE BUCKLING LOAD OF ISOTRUSS STRUCTURES SUBJECT TO UNIAXIAL COMPRESSION
Hanna Opdahl, Brigham Young University, United States

IAC-21.C2.IP.3 (confirmed)
 ELECTRONICS BOX DESIGN OPTIMIZATION OF LUNAR MICRO ROVERS
SARATH P MOHAN, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.C2.IP.4 (confirmed)
 MULTIDIMENSIONAL ANALYSIS OF LUNAR SOIL AND LUNAR SOIL SIMULANTS
Alejandro Tenorio, Universidad de Costa Rica, Costa Rica

IAC-21.C2.IP.8 (confirmed)
 STUDIES ON DEVELOPMENT OF NEW COATING MATERIAL FOR SPACE APPLICATIONS.
RUTVIK PANDIT, Sapienza University of Rome, Italy

IAC-21.C2.IP.9 (confirmed)
 THERMAL SYSTEM MODEL AND DESIGN OF THE CONTROL OF A 3U CUBESAT
Mridul Saxena, Birla Institute of Technology and Science (BITS), India

C3. IAF SPACE POWER SYMPOSIUM

Coordinator(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

C3.1. Solar Power Satellite

October 26 2021, 09:45 — Abu Dhabi A

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-21.C3.1.1 (confirmed)
 IAA DECADEAL ASSESSMENT OF SPACE SOLAR POWER: A PROGRESS REPORT
John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-21.C3.1.2 (confirmed)
 SPS-ALPHA MARK-III AND AN ACHIEVABLE ROADMAP TO SPACE SOLAR POWER
John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-21.C3.1.3 (confirmed)
 CLIMATE ACTION AND GROWING ELECTRICITY DEMAND: MEETING BOTH CHALLENGES IN THE 21ST CENTURY WITH SPACE-BASED SOLAR POWER DELIVERED BY SPACE ELEVATOR
David Dotson, International Space Elevator Consortium (ISEC), United States

IAC-21.C3.1.5 (video)
 THE IMPACT OF EMDRIVE PROPULSION ON THE LAUNCH COSTS FOR SOLAR POWER SATELLITES
Roger Shawyer, Satellite Propulsion Research Ltd, United Kingdom

IAC-21.C3.1.7 (confirmed)
 DISTRIBUTED SOLAR POWERED SUPERCOMPUTER SATELLITE
Georgiy Shcheglov, Bauman Moscow State Technical University, Russian Federation

IAC-21.C3.1.9 (confirmed)
 DISPOSAL METHOD FOR SPACE SOLAR POWER SATELLITE
Joon Min Choi, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-21.C3.1.10 (confirmed)
 SPACE SOLAR POWER STUDENT COMPETITION PAPER NO. 1
Miles Turner, Georgia Institute of Technology, United States

IAC-21.C3.1.11 (confirmed)
 SPACE SOLAR POWER STUDENT COMPETITION PAPER NO. 2
Elyas Masrour, University of Maryland - College Park, United States

C3.2. Wireless Power Transmission Technologies and Application

October 26 2021, 14:45 — Abu Dhabi A

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-21.C3.2.2 (confirmed)
 BOOTSTRAPPING LUNAR EXPLORATION TO SETTLEMENT: POWER AND ANCILLARY SERVICES BEAMING
Gary Barnhard, XISP-Inc, United States

IAC-21.C3.2.6 (video)
 ENHANCING TERRESTRIAL SOLAR POWER USING ORBITING SOLAR REFLECTORS
Onur Çelik, University of Glasgow, United Kingdom

IAC-21.C3.2.7 (confirmed)
 HELIOCENTRIC DYSON WEB FOR DISTRESS POWER BEAMING APPLICATIONS
Chesler Thomas, Space Generation Advisory Council (SGAC), India

IAC-21.C3.2.10 (confirmed)
 SPACE BASED SOLAR POWER: CONCEPT FOR SUSTAINABLE LUNAR APPLICATION
Lorenzo Bichisao, International Space University (ISU), Luxembourg

C3.3. Advanced Space Power Technologies

October 28 2021, 09:45 — Dubai D

Co-Chair(s): Matthew Perren, Airbus Defence & Space, United Kingdom; Gary Barnhard, XISP-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-21.C3.3.1 (video)**
 VERIFICATION OF THE 1U STANDARD CUBESAT ELECTRICAL POWER SYSTEM (EPS) FOR THE INTERNATIONAL SPACE STATION (ISS) SAFETY REQUIREMENTS
Hari Ram Shrestha, LaSEINE, Kyushu Institute of Technology, Japan
- IAC-21.C3.3.2 (video)**
 MODULAR ELECTRIC POWER SYSTEM WITH HIGH FLEXIBILITY FOR MICROSATELLITE
Hasan Maydita, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia
- IAC-21.C3.3.3 (video)**
 SYNTHESIS AND CHARACTERIZATION OF BIOMASS-BASED POLYMER ELECTROLYTES FOR CO₂ REDUCTION OF IN-SITU RESOURCE UTILIZATION APPLICATIONS
Nathan Wilson, Texas Tech University, United States
- IAC-21.C3.3.5 (video)**
 IMPACT OF SOLAR PANELS ORIENTATION ON THE POWER BUDGET: CASE OF MICROSATS
Abdelkader HADJ DIDA, Agence Spatiale Algérienne (ASAL), Algeria
- IAC-21.C3.3.6 (video)**
 SOLAR PANEL DESIGN AND ANALYSIS OF EQUATORIAL LEO MICROSATELLITE
Desti Ika Suryanti, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia
- IAC-21.C3.3.9 (video)**
 ARTIFICIAL INTELLIGENCE BASED SOH ESTIMATION ALGORITHM FOR LITHIUM-ION BATTERIES IN ORBIT
Shuo Jiang, CAST, China
- IAC-21.C3.3.11 (confirmed)**
 FABRICATION OF A HIGH-PERFORMANCE AND STABLE RADIOLUMINESCENCE NUCLEAR BATTERY BASED ON BILAYER FILM OF ZERO DIMENSIONAL CORE-SHELL ZNCDSE-ZNS QDS AND CSPBBR3 PEROVSKITE QDS AS POTENTIAL POWER SOURCE FOR SPACE EQUIPMENTS
Hassan Algadi, Najran University, Saudi Arabia

C3.4. Space Power System for Ambitious Missions

October 29 2021, 09:45 — Abu Dhabi A

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-21.C3.4.2 (video)**
 A NOVEL HIGH VOLTAGE CONVERSION MODULE FOR DIRECT-DRIVING ELECTRIC PROPULSION IN SATELLITES
Siyue Jiang, China Academy of Space Technology (CAST), China
- IAC-21.C3.4.4 (confirmed)**
 HIGH-TEMPERATURE SUPERCONDUCTOR BASED POWER SYSTEM ARCHITECTURES AS ENABLERS FOR HIGH POWER MISSIONS
Marcus Collier-Wright, Neutron Star Systems UG, Germany

IAC-21.C3.4.6 (confirmed)

AN EFFICIENT POWER MODELING APPROACH FOR THE EMIRATES LUNAR MISSION
Ahmed Sharaf, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.C3.4.7 (confirmed)

PYRITE AS PROSPECTIVE MONOGRAN LAYER SOLAR CELL ABSORBER MATERIAL FOR IN-SITU SOLAR CELL FABRICATION ON THE MOON
Katriin Kristmann, Tallinn University of Technology, Estonia

IAC-21.C3.4.8 (confirmed)

FUNCTIONAL CHARACTERIZATION AND TESTING OF A HYBRID ENERGY STORAGE SYSTEM APPLIED TO SPACE RESOURCES UTILIZATION
Valerio Giuliani, S.A.B. Aerospace Srl, Italy

IAC-21.C3.4.9 (confirmed)

VANADIUM OXIDE FOR HIGH TEMPERATURE SUPER CONDUCTION FOR INTERPLANETARY MISSIONS
Abhishek Singh, University of Mumbai, India

IAC-21.C3.4.10 (confirmed)

POWERING SUSTAINABLE MOON EXPLORATION: ENERGY STRATEGIES FOR INTEROPERABILITY AND COOPERATION
Paolo Pino, Polytechnic of Turin, Italy

C3.5-C4.10. Joint Session on Advanced and Nuclear Power and Propulsion Systems

October 29 2021, 13:30 — Ajman D

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-21.C3.5-C4.10.2 (confirmed)**
 COMPARATIVE OVERVIEW OF NEP PROGRAMS AND CONCEPTS
Manuel La Rosa Betancourt, Neutron Star Systems UG, Germany
- IAC-21.C3.5-C4.10.4 (confirmed)**
 THORIUM NUCLEAR POWER PLANT FOR USE IN OUTER SPACE
Artem Madatov, SPACE HUB Incubator, United States
- IAC-21.C3.5-C4.10.7 (confirmed)**
 ANALYSIS OF POSSIBLE EUTECTIC COMPOSITION OF FUEL AND BLANKET SALTS FOR LIQUID FLUORIDE THORIUM REACTOR ON MARTIAN SURFACE
Diana Pawlicki, University of Lodz, Poland
- IAC-21.C3.5-C4.10.8 (confirmed)**
 SPACE NUCLEAR POWER FOR TERRESTRIAL UTILITIES
Peter Schubert, Indiana University - Purdue University Indianapolis, United States

C3.IP. Interactive Presentations - IAF SPACE POWER SYMPOSIUM

October 28 2021, 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-21.C3.IP.1 (confirmed)**
 METAL-ORGANIC FRAMEWORK FOR STABLE CYCLABILITY OF LI-S BATTERIES FOR SPACE MISSIONS
Dominika Capková, Pavol Jozef Safarik University, Slovak Republic
- IAC-21.C3.IP.2 (confirmed)**
 PIEZOELECTRIC CRYSTALS IN NOSE CONE & RE-ENTRY HEAT SHIELDS FOR GENERATION OF ELECTRICITY & THEIR THERMAL INSULATION
Heet Naik, University of Mumbai, India

IAC-21.C3.IP.3 (confirmed)

MULTI-JUNCTION SOLAR CELLS PERFORMANCE ANALYSIS AND DEGRADATION PREDICTIONS IN SPACE

Abdelkader HADJ DIDA, Agence Spatiale Algérienne (ASAL), Algeria

▶ IAC-21.C3.IP.4 (video)

HIGH-TEMPERATURE PHOTOVOLTAIC CELLS FOR NEAR-SUN AND INTERSTELLAR PRECURSOR MISSIONS: STATE OF THE ART AND FUTURE DEVELOPMENTS

Corentin Guéméné, International Space University (ISU), France

IAC-21.C3.IP.7 (confirmed)

CAPSAT-1: THE LESSONS LEARNED IN DEVELOPING A SATELLITE MISSION WITH MIDDLE AND HIGH SCHOOL STUDENTS

Samer Elhoushy, BLUECUBE Aerospace, United States

C4. IAF SPACE PROPULSION SYMPOSIUM

Coordinator(s): Giorgio Saccoccia, Italian Space Agency (ASI), Italy; Christophe Bonhomme, Centre National d'Etudes Spatiales (CNES), France; Riheng Zheng, China Aerospace Science & Industry Corporation (CASIC), China; Vanessa Vial, SAFRAN, France; Elena Toson, T4i, Italy; George Schmidt, NASA Glenn Research Center, United States;

C4.1. Liquid Propulsion (1)

October 25 2021, 15:15 — Ajman D

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-21.C4.1.1 (confirmed)

DATA-DRIVEN EMULATION MODELS FOR ROCKET ENGINES INJECTOR DESIGN

Jose Felix Zapata Usandivaras, ISAE-Supaero University of Toulouse, France

IAC-21.C4.1.2 (confirmed)

DESIGN OF A CONICAL ANTI-SLOSH BAFFLE AND ITS EXPERIMENTAL VALIDATION FOR SLOSH STABILITY FOR THE INDIAN INTERPLANETARY MISSION

Sarath Chandran Nair S., Indian Space Research Organization (ISRO), Liquid Propulsion Systems Centre (LPSC), India

IAC-21.C4.1.4 (confirmed)

PRELIMINARY TEST OF HYDROGEN PEROXIDE THERMAL DECOMPOSITION MONOPROPELLANT THRUSTER

Seungho Lee, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

IAC-21.C4.1.6 (confirmed)

DEVELOPMENT OF AN ADDITIVELY MANUFACTURED HYDROGEN PEROXIDE / KEROSENE 6 KN AEROSPIKE BREADBOARD ENGINE

Tim Dorau, TU Dresden, Germany

IAC-21.C4.1.8 (confirmed)

LIQUID UPPER STAGE DEMONSTRATOR ENGINE (LUMEN): OVERVIEW AND PROJECT PROGRESS

Tobias Traudt, DLR (German Aerospace Center), Germany

IAC-21.C4.1.11 (confirmed)

COMPARISON BETWEEN A 400N ELECTRIC PUMP FED HYDROGEN PEROXIDE/ETHANOL THRUSTER AND THE MMH/NTO LEGACY SYSTEMS

Livia Ordóñez Valles, Hochschule Bremen, Germany

C4.2. Liquid Propulsion (2)

October 27 2021, 09:45 — Ajman D

Co-Chair(s): Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands; Didier Boury, ArianeGroup SAS, France; **Rapporteur(s):** Changjin Lee, Konkuk University, Korea, Republic of; Martin Velander, GKN Aerospace Engine Systems, Sweden;

▶ IAC-21.C4.2.1 (video)

DEVELOPMENT OF 500N CLASS BIPROPELLANT CERAMIC THRUSTER FOR SLIM(SMART LANDER FOR INVESTIGATING MOON)

Daijiro Shiraiwa, MHI, Japan

▶ IAC-21.C4.2.6 (video)

LARGE EDDY SIMULATION OF SELF-EXCITED COMBUSTION INSTABILITY IN A CONTINUOUSLY VARIABLE RESONANT COMBUSTOR

Abhishek Sharma, Indian Space Research Organization (ISRO), India

IAC-21.C4.2.8 (confirmed)

ACTIVE USE OF SIDE FORCES ON AEROSPIKE NOZZLES

Martin Propst, TU Dresden, Germany

IAC-21.C4.2.9 (confirmed)

REACTIVE MOLECULAR DYNAMICS OF ALTERNATIVE FUELS FOR LIQUID PROPULSION SYSTEMS

Rene Gonçalves, Instituto Tecnológico de Aeronáutica (ITA), Brazil

▶ IAC-21.C4.2.13 (video)

ANALYSIS OF PRESSURE FLUCTUATION CHARACTERISTICS OF HIGH SPEED CENTRIFUGAL PUMP

Yang Min, Beijing Aerospace Propulsion Institute, China

IAC-21.C4.2.14 (confirmed)

DEVELOPMENT AND COUPLED THRUSTER / ELECTROLYZER TESTS OF A WATER PROPULSION SYSTEM

Ulrich Gotzig, ArianeGroup, Germany

C4.3. Solid and Hybrid Propulsion (1)

October 26 2021, 09:45 — Ajman D

Co-Chair(s): Stéphane Henry, ArianeGroup, France; Yen-Sen Chen, National Space Organization, Taiwan, China; **Rapporteur(s):** Toru Shimada, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan; Mario Kobald, Hylmpulse Technologies GmbH, Germany; Jean-Claude TRAINEAU, ONERA - The French Aerospace Lab, France;

▶ IAC-21.C4.3.3 (video)

EFFECT OF RESIDUAL STRAIN ON STRUCTURAL INTEGRITY OF SRM GRAIN DURING IGNITION

Jiming CHENG, Science and Technology on Combustion, Internal Flow and Thermal-structure Laboratory, Northwestern Polytechnical University, China

IAC-21.C4.3.5 (confirmed)

STUDENT FIRING TESTS AND LAUNCHES WITH COMMERCIAL AND SELF-MADE SOLID ROCKET MOTORS

Mario Tindaro Migliorino, Sapienza University of Rome, Italy

IAC-21.C4.3.6 (confirmed)

CONCEPT STUDY OF CHEMICAL MICROPROPULSION SYSTEM USING COMBUSTION OF MICRON-SIZED ALUMINUM PARTICLES AND WATER-VAPOR

Masaya Murohara, The University of TOKYO, Graduate school, Japan

IAC-21.C4.3.7 (confirmed)

RMD SIMULATION AND COMBUSTION EVALUATION OF PARAFFIN/GOX FOR HYBRID ROCKET MOTORS

Rene Gonçalves, Instituto Tecnológico de Aeronáutica (ITA), Brazil

IAC-21.C4.3.8 (confirmed)

REDUCING PLANT DYNAMICS CHANGE FOR THRUST MODULATION IN HYBRID ROCKET COMBUSTION USING PID GAIN SCHEDULING

Donghoon Chae, Konkuk University, Korea, Republic of

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25–29 October 2021 | Dubai, United Arab Emirates

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IAC-21.C4.3.9 (confirmed)

RAVEN: A STUDENT ROCKET PROGRAM AT LULEÅ UNIVERSITY OF TECHNOLOGY, SWEDEN

Kiira Tiensuu, Luleå University of Technology, Sweden

IAC-21.C4.3.10 (confirmed)

NUMERICAL ANALYSIS OF A N₂O/PARAFFIN FUELED HYBRID ROCKET TO PERFORM CAPTURE MANEUVERS IN A MARS ORBIT

Caio Henrique Franco Levi Domingos, Sapienza University of Rome, Italy

IAC-21.C4.3.12 (confirmed)

REACTION RATE MEASUREMENT OF WIRE-FED MAGNESIUM IN WATER-VAPOR FLOW FOR MICROPROPULSION SYSTEM

Mariko Akiyama, University of Tokyo, Japan

C4.4. Solid and Hybrid Propulsion (2)

October 27 2021, 09:45 — Umm Al Kwain

Co-Chair(s): Arif Karabeyoglu, Koc University, Turkey; Jerome Breteau, European Space Agency (ESA), France;

Rapporteur(s): Ozan Kara, Space Generation Advisory Council (SGAC), Turkey; Ashley Karp, Jet Propulsion Laboratory - California Institute of Technology, United States;

IAC-21.C4.4.3 (confirmed)

DESIGN OF A VERTICAL TEST BENCH FOR HYBRID ROCKET MOTORS WITH TVC TESTING CAPABILITIES

Maurício Gontijo, University of Brasilia, Brazil

IAC-21.C4.4.4 (confirmed)

ENERGETIC HYDROCARBON BASED ROCKET PROPELLANTS FOR UPPER STAGE PROPULSION

Pranjal Mhatre, University of Mumbai, India

IAC-21.C4.4.5 (confirmed)

CENTRIFUGAL CASTING OF PARAFFIN WAX: NUMERICAL SIMULATION - INFLUENCE OF ROTATIONAL SPEED, FLUID VISCOSITY, TUBE DIAMETER, AND VOLUME FILL FRACTION.

Gladys Ngetich, Massachusetts Institute of Technology (MIT), United States

IAC-21.C4.4.7 (confirmed)

IGNITION DELAY IMPROVEMENT BY CATALYSTS SUPPORTED ON ACTIVATED CARBON FOR HYDROGEN PEROXIDE HYPERGOLIC HYBRID ROCKET

Junyeong Jeong, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

IAC-21.C4.4.9 (confirmed)

PERFORMANCE ANALYSIS OF A SWIRL INJECTOR WITH POLYURETHANE BINDER AND PARAFFIN AS ADDITIVE

Rene Gonçalves, Instituto Tecnológico de Aeronáutica (ITA), Brazil

IAC-21.C4.4.11 (confirmed)

HEAT FLOWS IN THE GASIFICATION CHAMBER OF THE POLYMER PROPELLED AUTOPHAGE LAUNCH VEHICLE

Vitaly Yemets, Oles Honchar Dnipropetrovsk National University, Ukraine

IAC-21.C4.4.12 (confirmed)

ANALYTICAL AND NUMERICAL STUDY OF THE N₂O FLOW IN THE FEED SYSTEM OF A SMALL SATELLITE.

Renato de Brito do Nascimento Filho, University of Brasilia, Brazil

C4.5. Electric Propulsion (1)

October 26 2021, 14:45 — Ajman D

Co-Chair(s): Garri A. Popov, Research Institute of Applied Mechanics and Electrodynamics (RIAME), MAI, Russian Federation; Mariano Andrenucci, Sitael Spa, Italy;

Rapporteur(s): Vanessa Vial, SAFRAN, France; Nicoletta Wagner, European Space Agency (ESA), France; George Schmidt, NASA Glenn Research Center, United States;

IAC-21.C4.5.2 (video)

A SUPERCONDUCTING EM-DRIVE THRUSTER. DESIGN, PERFORMANCE AND APPLICATION.

Roger Shawyer, Satellite Propulsion Research Ltd, United Kingdom

IAC-21.C4.5.3 (confirmed)

A NOVEL SPACECRAFT PROPULSION DESIGN USING IONIZED MICROPLASTICS

Ananya Kodukula, Ramaiah Institute of Technology, India

IAC-21.C4.5.4 (confirmed)

DESIGN OF A HOLLOW CATHODE THRUSTER – AN OVERVIEW OF ELECTRIC PROPULSION CONCEPTS BASED ON HOLLOW CATHODE TECHNOLOGY

Norman Gondol, TU Dresden, Germany

IAC-21.C4.5.5 (confirmed)

EXTENDED QUALIFICATION LIFE TEST OF THE PPS®5000 HALL THRUSTER UNIT

Vanessa Vial, SAFRAN, France

IAC-21.C4.5.6 (confirmed)

PPS®X00 HALL THRUSTER DEVELOPMENT STATUS

Vanessa Vial, SAFRAN, France

IAC-21.C4.5.7 (confirmed)

SITAE'S HIGH-POWER HALL PROPULSION SYSTEMS

Tommaso Andreussi, Sitael Spa, Italy

IAC-21.C4.5.8 (confirmed)

DEVELOPMENT OF NOVEL ELECTRODELESS PLASMA THRUSTER WITH MULTIPLE THRUST VECTORING CAPABILITY

Andrei Shumeiko, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-21.C4.5.9 (confirmed)

E-REGULUS: DEVELOPMENT OF A 150 W PROTOTYPE OF MAGNETICALLY ENHANCED PLASMA THRUSTER

Matteo Duzzi, T4i, Italy

IAC-21.C4.5.12 (confirmed)

AIR BREATHING ELECTRIC THRUSTER: TOWARDS VERY LOW EARTH ORBIT MISSIONS

Tommaso Andreussi, Sitael Spa, Italy

IAC-21.C4.5.13 (confirmed)

HAYABUSA2'S RETURN TO EARTH AND A NEW DEPARTURE BY MICROWAVE DISCHARGE ION ENGINES

Kazutaka Nishiyama, Japan Aerospace Exploration Agency (JAXA), Japan

C4.6. Electric Propulsion (2)

October 27 2021, 14:45 — Ajman D

Co-Chair(s): Alexander Lovtsov, SSC Keldysh Research Centre, Russian Federation; Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands;

Rapporteur(s): Elizabeth Driscoll, Spaceflight, United States; Julien Vaudolon, Exotrail, France;

IAC-21.C4.6.1 (confirmed)

RECENT ELECTRIC PROPULSION-RELATED ACTIVITIES AT DLR'S STG-ET FACILITY

Jens Schmidt, DLR (German Aerospace Center), Germany

IAC-21.C4.6.3 (confirmed)

NUMERICAL SUITE FOR MAGNETICALLY ENHANCED PLASMA THRUSTERS

Mirko Magarotto, University of Padova - DII/CISAS, Italy

IAC-21.C4.6.5 (video)

FEASIBILITY STUDY OF SYMMETRICAL CAPACITOR THRUSTERS FOR SPACE PROPULSION

Zihao Wang, The University of Sydney, Australia

IAC-21.C4.6.6 (confirmed)

OPTIMIZATION OF THE IGNITION DELAY OF A XENON MINIATURIZED GRIDDED ION THRUSTER

Javier Martínez Martínez, ThrustMe, France

IAC-21.C4.6.7 (confirmed)

PROGRESS IN RESEARCH AND DEVELOPMENT OF SUPERCONDUCTOR-BASED APPLIED-FIELD MAGNETOPLASMA DYNAMIC TECHNOLOGY
Marcus Collier-Wright, Neutron Star Systems UG, Germany

IAC-21.C4.6.8 (confirmed)

AN EXPERIMENTAL STUDY OF THE ION THRUSTER ION-EXTRACTION SYSTEM MADE OF THE FINE-STRUCTURE CARBON-CARBON COMPOSITE
Ruslan Akhmetzhanov, Research Institute of Applied Mechanics and Electrodynamics (RIAME), MAI, Russian Federation

IAC-21.C4.6.9 (confirmed)

LASER-INDUCED IGNITION IN AIR-BREATHING ELECTRIC THRUSTERS
Sergey Chernyshev, Central AeroHydrodynamic Institute (TsAGI), Russian Federation

IAC-21.C4.6.13 (confirmed)

HIGH-PRECISION DIGITAL FARADAY CUPS FOR FEEP THRUSTERS
Nina Sarah Mühlich, FOTEC Forschungs- und Technologietransfer GmbH, Austria

IAC-21.C4.6.14 (confirmed)

VERIFICATION OF SIMULATION MODEL BASED ON BEAM DIAGNOSTICS MEASUREMENTS OF THE IFM NANO THRUSTER
Nina Sarah Mühlich, FOTEC Forschungs- und Technologietransfer GmbH, Austria

C4.7. Hypersonic Air-breathing and Combined Cycle Propulsion, and Hypersonic Vehicle

October 28 2021, 09:45 — Ajman D

Co-Chair(s): Riheng Zheng, China Aerospace Science & Industry Corporation (CASIC), China; Yen-Sen Chen, American Institute of Aeronautics and Astronautics (AIAA), United States;

Rapporteur(s): Simon Feast, Reaction Engines Ltd., United Kingdom; Jean-Claude Traineau, Office National d'Etudes et de Recherches Aéropatiales (ONERA), France;

IAC-21.C4.7.7 (confirmed)

NUMERICAL INVESTIGATIONS OF FUEL INJECTION TECHNIQUES IN A CAVITY-BASED SCRAMJET
Naresh Relangi, Scuola di Ingegneria Aerospaziale "La Sapienza", Italy

IAC-21.C4.7.10 (confirmed)

IMPLEMENTATION OF THE RAMJET CONTROL ALGORITHM IN THE CONNECTED PIPE TEST BENCH
Olexiy Shynkarenko, University of Brasilia, Brazil

IAC-21.C4.7.11 (confirmed)

SIMULATION OF DIFFERENT MIXTURE FEEDING REGIMES IN A CONTINUOUS WAVE DETONATION ENGINE
Elena Mikhailchenko, Scientific Research Institute for System Analysis, Russian Academy of Sciences (RAS), Russian Federation

C4.8-B4.5A. Joint Session between IAA and IAF for Small Satellite Propulsion Systems

October 28 2021, 14:45 — Ajman D

Co-Chair(s): Arnau Pons Lorente, Space Generation Advisory Council (SGAC), United States; Jeff Emdee, The Aerospace Corporation, United States;

Rapporteur(s): Elena Toson, T4i, Italy; Elizabeth Jens, Jet Propulsion Laboratory - California Institute of Technology, United States;

IAC-21.C4.8-B4.5A.1 (confirmed)

KEYNOTE: ELECTRIC PROPULSION FOR CUBESATS: A REVIEW
Mirko Magarotto, University of Padova - DII/CISAS, Italy

IAC-21.C4.8-B4.5A.2 (confirmed)

DESIGN OF A MODULAR 1U PROPELLANT TANK FOR CUBESATS HTP MONOPROPELLANT PROPULSION SYSTEM
Luca Sales, University of Pisa, Italy

IAC-21.C4.8-B4.5A.3 (confirmed)

DEMONSTRATION OF THE LOW-POWER HALL THRUSTER WITH WATER PROPELLANT
Kento Shirasu, The University of TOKYO, Graduate school, Japan

IAC-21.C4.8-B4.5A.5 (confirmed)

THERMAL DECOMPOSITION OF HAN GREEN PROPELLANT
Rachid Amrousse, Chouaib Doukkali University, Morocco

IAC-21.C4.8-B4.5A.6 (confirmed)

DEMONSTRATION OF EXHAUST PLUME QUASI-NEUTRALITY IN A PULSED CATHODIC ARC THRUSTER
Patrick Neumann, Space Industry Association of Australia, Australia

IAC-21.C4.8-B4.5A.8 (confirmed)

MODELING AND SIMULATION OF IN-ORBIT CENTRIFUGAL CASTING OF A PARAFFIN WAX GRAIN INSIDE A 3U CUBESAT
Daniele Leuteri Costanzo, Politecnico di Milano, Italy

IAC-21.C4.8-B4.5A.10 (confirmed)

DESIGN AND VALIDATION OF A 12U CUBESAT TEST PLATFORM FOR THE VERIFICATION AT SYSTEM LEVEL OF MINIATURIZED ELECTRIC PROPULSION SYSTEMS
Sabrina Corpino, Politecnico di Torino, Italy

IAC-21.C4.8-B4.5A.11 (confirmed)

AN EXPERIMENTAL AND CONCEPTUAL ENGINEERING MODEL OF A CUBE-SATELLITE USING ABLATIVE LASER PROPULSION FOR FUTURE DEEP SPACE MISSIONS
Anand Nagesh, Spaceonova, India

IAC-21.C4.8-B4.5A.12 (confirmed)

PROPELLANT LINE DIMENSIONING FOR 'GREEN' CUBESAT MONO-PROPELLANT PROPULSION SYSTEMS
Fabian Nett, Delft University of Technology (TU Delft), The Netherlands

C4.9. New Missions Enabled by New Propulsion Technology and Systems

October 29 2021, 09:45 — Ajman D

Co-Chair(s): Giorgio Saccoccia, Italian Space Agency (ASI), Italy; Sabrina Corpino, Politecnico di Torino, Italy; Elena Toson, T4i, Italy;

Rapporteur(s): Elizabeth Driscoll, Spaceflight, United States; Salvatore Borrelli, CIRA Italian Aerospace Research Centre, Italy; Markus Jaeger, ArianeGroup, Germany;

IAC-21.C4.9.1 (confirmed)

MAXIMIZATION OF THE DOMAIN OF TOLERANCE OF SPACECRAFT WITH AIR-BREATHING ELECTRIC PROPULSION ON PROBABLE VARIATIONS OF CHARACTERISTICS OF ULTRA-LOW EARTH ORBITS AND IONOSPHERE
Alexander Golikov, Central AeroHydrodynamic Institute (TsAGI), Russian Federation

IAC-21.C4.9.2 (confirmed)

OPTIMAL USE OF ELECTRIC PROPULSION FOR DRAG COMPENSATION IN VERY LOW EARTH ORBIT ON SATELLITES WITH DEPLOYABLE SOLAR PANELS
Francesco Barato, University of Padova - DII/CISAS, Italy

IAC-21.C4.9.3 (confirmed)

DEVELOPMENT AND QUALIFICATION OF THE FEEP TECHNOLOGY FOR THE UPCOMING ESA'S EARTH OBSERVATION MISSION NGGM
Laura Bettiol, FOTEC Forschungs- und Technologietransfer GmbH, Austria

IAC-21.C4.9.5 (video)

SELECTION OF THE PROPULSION SYSTEM FOR THE LUMIO MISSION: AN INTRICATE TRADE-OFF BETWEEN COST, RELIABILITY AND PERFORMANCE
Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25-29 October 2021 | Dubai, United Arab Emirates

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IAC-21.C4.9.7 (confirmed)

SMALL BODY ASCENT ENABLED BY IN SPACE RESOURCE DERIVED AND PRODUCED HYDROGEN PEROXIDE
Connor Geiman, Orbit Fab, United States

IAC-21.C4.9.9 (confirmed)

ANALYSIS BASED MULTI-MODE PROPULSION SYSTEM FOR LANDER MISSIONS THROUGH SIMULATION
Sagarika Rao Valluri, RNSIT Bangalore, India

IAC-21.C4.9.10 (confirmed)

THE COMET INTERCEPTOR MISSION - MAKING A CASE FOR SOLAR ELECTRIC PROPULSION
Henrique Costa, GMV Innovating Solutions, Portugal

C4.10-C3.5. Joint Session on Advanced and Nuclear Power and Propulsion Systems

October 29 2021, 13:30 — Ajman D

Co-Chair(s): Yen-Sen Chen, American Institute of Aeronautics and Astronautics (AIAA), United States; Leopold Summerer, ESA - European Space Agency, The Netherlands;

Rapporteur(s): Vito Salvatore, CIRA Italian Aerospace Research Center, Capua, Italy; Changjin Lee, Konkuk University, Korea, Republic of;

IAC-21.C4.10-C3.5.1 (confirmed)

OVERVIEW OF BREAKTHROUGH PROPULSION RESEARCH AT TU DRESDEN
Martin Tajmar, TU Dresden, Germany

IAC-21.C4.10-C3.5.6 (confirmed)

ON THE STUDY OF INTERNATIONAL SPACE STATION ORBIT KEEPING USING VARIABLE SPECIFIC IMPULSE MAGNETOPLASMA PROPULSION
Bhakti Mithagri, St. Xavier's College, Mumbai, India

IAC-21.C4.10-C3.5.11 (confirmed)

TOWARD THE ENGINEERING FEASIBILITY OF THE CENTRIFUGAL NUCLEAR THERMAL ROCKET
Dale Thomas, University of Alabama in Huntsville, United States

C4.IP. Interactive Presentations - IAF SPACE PROPULSION SYMPOSIUM

October 28 2021, 13:15 — IP Area

Co-Chair(s): Elizabeth Jens, Jet Propulsion Laboratory - California Institute of Technology, United States; Vanessa Vial, SAFRAN, France; Yen-Sen Chen, American Institute of Aeronautics and Astronautics (AIAA), United States; Mario Kobald, German Aerospace Center (DLR), Germany;

IAC-21.C4.IP.7 (confirmed)

HYBRID PROPULSION SYSTEMS FOR RECONFIGURABLE SMALL SATELLITE CONSTELLATIONS
Chloe Gentgen, Massachusetts Institute of Technology (MIT), United States

IAC-21.C4.IP.9 (confirmed)

INVESTIGATION OF NUMERICAL MODELING METHODS FOR LIQUID FUEL COMBUSTION AND APPLICATIONS FOR SMALL-SCALE BI-PROPELLANT LIQUID ROCKET ENGINES
Charmaine Neufeld, University of British Columbia, Canada

D IAC-21.C4.IP.16 (video)

RESEARCH ON THE SUPPRESSION METHODS OF HIGH FREQUENCY PRESSURE PULSATION IN COMBUSTION CHAMBER FOR LIQUID ROCKET ENGINE
Chen Cao, Xian Aerospace Propulsion Institute, China

D IAC-21.C4.IP.17 (video)

SYSTEM ANALYSIS OF FEED SYSTEM COUPLED COMBUSTION STABILITY IN LIQUID ROCKET ENGINES
Meng Dong, Xi'an Aerospace Propulsion Institute, China

IAC-21.C4.IP.21 (confirmed)

ELECTROMAGNETIC ROCKET LAUNCH SYSTEM
Heet Naik, University of Mumbai, India

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 25 2021, 15:15 — Al Ain J

Co-Chair(s): Tibor Balint, Art Center College of Design, United States; Peter Dieleman, Netherlands Aerospace Centre (NLR), The Netherlands;

Rapporteur(s): Camillo Richiello, CIRA Italian Aerospace Research Centre, Italy;

IAC-21.D1.1.1 (confirmed)

CONCEPT OF OPERATIONS AND PRELIMINARY FLIGHT MODEL DESIGN OF A MODULAR MULTI-ARM ROBOT USING STANDARD INTERCONNECTS FOR ON-ORBIT LARGE ASSEMBLY
Mathieu Deremetz, Space Applications Services, Belgium

IAC-21.D1.1.2 (confirmed)

AI-IN-ORBIT-FACTORY - AI APPROACHES FOR ADAPTIVE ROBOTIC IN-ORBIT MANUFACTURING OF MODULAR SATELLITES
Florian Kempf, Zentrum für Telematik, Germany

IAC-21.D1.1.3 (confirmed)

AN AUTONOMOUS ARCHITECTURE FOR CONSTELLATION MANAGEMENT OPERATIONS: MISSION CONTROL IN THE ERA OF MEGA-CONSTELLATIONS
Federica Paganelli Azza, AIKO S.r.l., Italy

IAC-21.D1.1.4 (confirmed)

DESIGN, IMPLEMENTATION, AND ANALYSIS OF A NOVEL LIDAR SYSTEM FOR SPACE MISSIONS USING A COMBINATION OF MEMS STEERING AND FLASH TECHNOLOGIES, SEMICONDUCTOR LASERS, AND TIME-OF-FLIGHT IMAGERS
Hamdy Elsayed, Ryerson University, Canada

IAC-21.D1.1.7 (confirmed)

STUDY INTO IN-ORBIT SERVICING OF THE ROSETTA MISSION
Loveneesh Rana, University of Luxembourg, Luxembourg

IAC-21.D1.1.8 (confirmed)

AIX SPACE-EDGE APP STORE
Leonardo Amoroso, Planetek Hellas epe, Italy

D1.2. Space Systems Architectures

October 26 2021, 09:45 — Al Ain J

Co-Chair(s): Franck Durand-Carrier, Centre National d'Etudes Spatiales (CNES), France; Matteo Emanuelli, Airbus Defence and Space, Germany;

Rapporteur(s): Jill Prince, National Aeronautics and Space Administration (NASA), United States;

IAC-21.D1.2.1 (confirmed)

PRELIMINARY DESIGN OF A LEO SPACECRAFT FOR FAR RENDEZVOUS, ON-ORBIT INSPECTION AND SOFT-DENY
Ricardo Colpari Carrizo, Ecole Polytechnique, France

IAC-21.D1.2.2 (confirmed)

NMPC-BASED ORBIT AND FORMATION CONTROL FOR AN EARTH-GRAVITY MONITORING MISSION
Mattia Boggio, Politecnico di Torino, Italy

IAC-21.D1.2.3 (confirmed)

RESEARCH AND OBSERVATION IN MEDIUM EARTH ORBIT (ROMEO) WITH A COST-EFFECTIVE MICROSATELLITE PLATFORM
Thorben Löffler, University of Stuttgart, Germany

IAC-21.D1.2.4 (confirmed)

ABRAHAM'S OASIS IN THE STARS: ORBITAL MICRO HABITATS FOR EMERGENCY AND FUNCTIONAL ASTRONAUT USE
Jay Harwood, Israel Aerospace Industries Ltd., Israel

IAC-21.D1.2.5 (confirmed)

SYSTEMS ARCHITECTURE STUDY OF ON-ORBIT SERVICING INFRASTRUCTURE DEPLOYMENT SCENARIOS
Victoria Krivova, Skolkovo Institute of Science and Technology, Russian Federation

IAC-21.D1.2.6 (confirmed)

SMALL SATELLITE CONSTELLATION FOR WEATHER MONITORING: FROM MISSION ANALYSIS TO SATELLITE DESIGN
Daria Stepanova, German Orbital Systems GmbH, Germany

IAC-21.D1.2.7 (confirmed)

SYSTEMS ARCHITECTURE STUDY FOR FUTURE SPACEBORNE INTERNET OF THINGS CONNECTIVITY
Ksenia Osipova, Skolkovo Institute of Science and Technology, Russian Federation

IAC-21.D1.2.9 (confirmed)

COMMUNICATIONS SYSTEM FOR CUBESAT
Délcio de Almeida, Angola

D1.3. Technologies to Enable Space Systems

October 26 2021, 14:45 — Al Ain J

Co-Chair(s): Steven Arnold, The John Hopkins University Applied Physics Laboratory, United States; Xavier Roser, Thales Alenia Space France, France;

Rapporteur(s): Yoshihisa Arikawa, Japan Aerospace Exploration Agency (JAXA), Japan;

IAC-21.D1.3.1 (confirmed)

IRAS - NEW TECHNOLOGIES FOR LOW COST SATELLITES
Tina Stäbler, German Aerospace Center (DLR), Germany

IAC-21.D1.3.2 (confirmed)

CHURINET - A DEEP LEARNING APPROACH TO OPTICAL NAVIGATION FOR MINOR BODIES
Alfredo Escalante, European Space Agency (ESA/ESAC), Spain

D IAC-21.D1.3.3 (video)

ON-BOARD SOFTWARE DESIGN FOR THE EMIRATES LUNAR MISSION USING OFF THE SHELF HARDWARE
Mohammed Khoory, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.D1.3.4 (confirmed)

ERMES: EXPERIMENTAL RENDEZVOUS IN MICROGRAVITY ENVIRONMENT STUDY
Alessandro Bortotto, Università degli Studi di Padova, Italy

IAC-21.D1.3.5 (confirmed)

HIGH ACCURACY ATTITUDE ESTIMATION FOR CUBESAT USING FPGA IMPLEMENTATION WITH LOW EXECUTION TIME
Yaqaob Alqassab, Khalifa University of Science and Technology (KUST), United Arab Emirates

IAC-21.D1.3.7 (confirmed)

HARDWARE ACCELERATED MACHINE LEARNING ON EMBEDDED SYSTEMS FOR SPACE APPLICATIONS
Ric Dengel, Luleå University of Technology, Germany

IAC-21.D1.3.8 (confirmed)

DESIGN TO THE EDGE: PERSPECTIVES OF AI AND ESTIMATION TECHNIQUES IN AUTONOMOUS SPACECRAFT
Giovanni B. Palmerini, Sapienza University of Rome, Italy

D IAC-21.D1.3.11 (video)

HIGH RATIO IMAGE COMPRESSION FOR DEEP SPACE EXPLORATION
Zheng Gu, Beijing Institute of Spacecraft System Engineering, China

D1.4A. Space Systems Engineering - Methods, Processes and Tools (1)

October 28 2021, 09:45 — Al Ain J

Co-Chair(s): Dapeng Wang, Beihang University, China; Peter Dieleman, Netherlands Aerospace Centre (NLR), The Netherlands;

Rapporteur(s): Franck Durand-Carrier, Centre National d'Etudes Spatiales (CNES), France;

IAC-21.D1.4A.3 (confirmed)

GENERIC SPACECRAFT DESIGN PREDICTION AND MODELING
Manfred Ehresmann, Institute of Space Systems, University of Stuttgart, Germany

IAC-21.D1.4A.4 (confirmed)

APPLICATION OF A HIERARCHICAL TASK PLANNER TO A LUNAR LAVA TUBE ANALOGUE ROBOTIC MISSION
Jasmine Rimani, Politecnico di Torino, Italy

IAC-21.D1.4A.5 (confirmed)

THE DIGITAL CONCURRENT ENGINEERING PLATFORM DCEP
Tatjana Cziep, German Aerospace Center (DLR), Germany

IAC-21.D1.4A.6 (confirmed)

DESIGN OPTIMIZATION AND DEVELOPMENT STATUS OF ELECTRIC PROPULSION SYSTEM FOR SATELLITES
Vanessa Vial, SAFRAN, France

IAC-21.D1.4A.7 (confirmed)

EMIRATES MARS MISSION FLIGHT SIMULATOR: FLATSAT RISK-REDUCTION
Ali AlSuwaidi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.D1.4A.8 (confirmed)

DEVELOPMENT OF A DISTRIBUTED SIMULATION ENVIRONMENT AND MODEL DRIVEN ENGINEERING FRAMEWORK TO SUPPORT THE VERIFICATION & VALIDATION OF COMPLEX AUTONOMY COMPONENTS.
Steven Kay, GMV Innovating Solutions, United Kingdom

IAC-21.D1.4A.9 (confirmed)

VISION OF A NEXT-GEN CONCURRENT DESIGN FACILITY (CDF-LU)
Loveneesh Rana, University of Luxembourg, Luxembourg

D IAC-21.D1.4A.10 (video)

ONTOLOGY ENGINEERING FOR SPACE MISSION DESIGN: A CASE STUDY OF A SUBORBITAL HUMAN SPACEFLIGHT MISSION
Yaroslav Menshenin, Skolkovo Institute of Science and Technology, Russian Federation

IAC-21.D1.4A.11 (confirmed)

LARGE SCALE MULTIDISCIPLINARY DESIGN OPTIMIZATION OF A DISTRIBUTED SPACE SYSTEM
Raja Pandi Perumal, University of Luxembourg, Luxembourg

IAC-21.D1.4A.12 (confirmed)

SMALL SATS LIFECYCLE MANAGEMENT THROUGH MBSE AIDED DECISION MAKING TAILORED TOOL
Paolo Minacapilli, Politecnico di Milano, Italy

D1.4B. Space Systems Engineering - Methods, Processes and Tools (2)

October 28 2021, 14:45 — Al Ain J

Co-Chair(s): Geilson Loureiro, Instituto Nacional de Pesquisas Espaciais (INPE), Brazil; Norbert Frischauf, TU Graz, Austria;

Rapporteur(s): Jon Holladay, National Aeronautics and Space Administration (NASA), United States;

IAC-21.D1.4B.1 (confirmed)

MODEL-BASED SYSTEMS ENGINEERING (MBSE)—WHAT GOOD IS IT? LESSONS LEARNED ON SMALL SATELLITE PROJECTS
Jerry Sellers, Teaching Science and Technology, Inc., United States

IAC-21.D1.4B.2 (confirmed)

CASE STUDY: HOW THE NEW SPACE INDUSTRY IS SWITCHING TO DATA-DRIVEN ENGINEERING - FULL OVERVIEW FROM REQUIREMENTS ENGINEERING TO TESTING AND DOCUMENTATION: HOW TO WORK THE AGILE WAY ANNO 2021
Stefan Siarov, Valispace, Germany

IAC-21.D1.4B.3 (confirmed)

ANALYSIS AND IMPLEMENTATION OF MBSE APPROACH TO SELECT AN AUTHORITATIVE SOURCE OF TRUTH FOR SPACE SYSTEMS LIFECYCLE MANAGEMENT
Karolina Latserus, Skolkovo Institute of Science and Technology, Russian Federation

IAC-21.D1.4B.5 (confirmed)

MULTIDISCIPLINARY DESIGN OPTIMIZATION OF CAROLINE, A REUSABLE LUNAR LANDER/ASCENDER FOR ON-ORBIT REFUELING OF HERSCHEL
Raja Pandi Perumal, University of Luxembourg, Luxembourg

IAC-21.D1.4B.7 (confirmed)

INTEGRATION OF QUALITY TOOLS TO DEFINE THE SCOPE OF A CUBESAT SCIENTIFIC/TECHNOLOGY DEMONSTRATION MISSION.
Ángel M. Zarate-Villazon, Universidad Panamericana de Ciudad de México, Mexico

IAC-21.D1.4B.8 (confirmed)

MULTI ASPECT SIMULATION FRAMEWORK FOR DISTRIBUTED CONTROL OF NETWORKED SATELLITE FORMATIONS
Florian Kempf, Zentrum für Telematik, Germany

IAC-21.D1.4B.11 (confirmed)

CONCURRENT CONCEPTUAL DESIGN THROUGH ONTOLOGY DEFINITIONS AND DECLARATIVE MODEL SOLVER
Johannes Norheim, Massachusetts Institute of Technology (MIT), United States

D1.5. Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards.

October 29 2021, 09:45 — Al Ain J

Co-Chair(s): Yoshihisa Arikawa, Japan Aerospace Exploration Agency (JAXA), Japan; Igor V. Belokonov, Samara National Research University (Samara University), Russian Federation;
Rapporteur(s): Otfried G. Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States;

IAC-21.D1.5.2 (confirmed)

LESSONS LEARNED IN SYSTEMS ENGINEERING AVAILABILITY AND RECOMMENDATIONS FOR MISSION TECHNICAL LEADERS
Charles Baker, NASA Goddard Space Flight Center (USRA), United States

IAC-21.D1.5.3 (confirmed)

PROJECT EFFICIENCY: A DIFFERENT SUCCESS CRITERIA FOR SPACE SYSTEMS PROJECTS
Eleonora Zeminiani, Thales Alenia Space Italia, Italy

IAC-21.D1.5.4 (confirmed)

FROM LIFE CYCLE ASSESSMENT OF SPACE SYSTEMS TO ENVIRONMENTAL COMMUNICATION AND REPORTING
Andrew Ross Wilson, University of Strathclyde, United Kingdom

IAC-21.D1.5.5 (confirmed)

THE PATH TOWARDS THE FUTURE OF THE NEW-OLD SPACE INDUSTRY
Michal Jashinski, Israel Aerospace Industries Ltd., Israel

IAC-21.D1.5.6 (confirmed)

STATISTICAL RELIABILITY ANALYSIS OF LARGE SATELLITES: A DECADE IN REVIEW
Raja Pandi Perumal, University of Luxembourg, Luxembourg

D1.6. Cooperative and Robotic Space Systems

October 29 2021, 13:30 — Al Ain J

Co-Chair(s): Klaus Schilling, Zentrum für Telematik, Germany; Dapeng Wang, Beihang University, China;
Rapporteur(s): Steven Arnold, The John Hopkins University Applied Physics Laboratory, United States;

IAC-21.D1.6.1 (video)

COORDINATED CONTROL OF SPACECRAFT-MANIPULATOR WITH SINGULARITY AVOIDANCE USING DUAL QUATERNIONS
Mauro Massari, Politecnico di Milano, Italy

IAC-21.D1.6.2 (confirmed)

MOSAR-WM: INTEGRATION AND TESTS RESULTS OF A RELOCATABLE ROBOTIC ARM DEMONSTRATOR FOR FUTURE ON-ORBIT SERVICING MISSIONS
Mathieu Deremetz, Space Applications Services, Belgium

IAC-21.D1.6.5 (confirmed)

STANDARD INTERFACE FOR ROBOTIC MANIPULATION (SIROM): CURRENT STATE AND FUTURE DEVELOPMENTS FOR ONE OF THE MAIN BUILDING BLOCKS FOR SPACE ROBOTICS ADVANCEMENT
Montserrat Diaz-Carrasco, SENER, Spain

IAC-21.D1.6.6 (video)

PREDICTIVE CONTROL AND REINFORCEMENT LEARNING FOR COLLISION-AVOIDANCE GUIDANCE AND CONTROL OF NASA ASTROBEE ROBOTS
Isuru Basnayake, New Mexico State University, United States

IAC-21.D1.6.7 (confirmed)

TOWARDS INCREMENTAL AUTONOMY FRAMEWORK FOR ON-ORBIT VISION-BASED GRASPING
Kuldeep Rambhai Barad, University of Luxembourg, Luxembourg

IAC-21.D1.6.9 (confirmed)

ATTITUDE CONSENSUS CONTROL OF SPACECRAFT FORMATION FLYING: MODEL-BASED DESIGN
Ahmed Alzubairi, King Abdulaziz University, Saudi Arabia

IAC-21.D1.6.10 (video)

A NOVEL FAST MOTION PLANNING ALGORITHM FOR SPACE REDUNDANT ROBOT
Jie Li, National Key Laboratory of Aerospace Flight Dynamics, Northwestern Polytechnical University, China

IAC-21.D1.6.13 (confirmed)

ACTIVE LIGHTING AND CUES TO FACILITATE COOPERATIVE ON-ORBIT TWO-STAGE DOCKING BY SMALL SATELLITES
Athip Thirupathi Raj, University of Arizona, United States

D1.IP. Interactive Presentations - IAF SPACE SYSTEMS SYMPOSIUM

October 28 2021, 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-21.D1.IP.1 (confirmed)

THE BIONIC CONCEPT OF NEXT GENERATION SPACECRAFT AND ITS KEY ROLE IN SUSTAINABLE DEVELOPMENTS OF FUTURE TECHNOLOGIES WITH NEW REDEFINED ELECTRICAL AND COMMUNICATION TECHNOLOGY
SANDHYA RAO, India

IAC-21.D1.IP.2 (confirmed)

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
SANDHYA RAO, India

IAC-21.D1.IP.3 (confirmed)

AN L-CLASS MULTIROLE OBSERVATORY AND SCIENCE PLATFORM FOR NEPTUNE
James E. McKevitt, University of Vienna, Austria

IAC-21.D1.IP.4 (confirmed)

DESIRA: A DECISION SUPPORT SYSTEM FOR INCORPORATING RISK ASSESSMENTS IN EARLY DESIGN STAGES
Raja Pandi Perumal, University of Luxembourg, Luxembourg

▣ IAC-21.D1.IP.7 (video)

LINEAR STATE FEEDBACK CONTROL FOR DISTURBED MOTION AND VIBRATION OF THE COMBINATION SYSTEM AFTER FLEXIBLE-BASE FLEXIBLE-LINK AND FLEXIBLE-JOINT SPACE ROBOT CAPTURING SATELLITE
Xiaodong Fu, Fuzhou University, China

IAC-21.D1.IP.8 (confirmed)

EXTENDED REALITY INTEGRATED INTO TRADE SPACE EXPLORATION
Guglielmo Daddi, Politecnico di Torino, Italy

D2. IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM

Coordinator(s): Yuguang Yang, China Aerospace Science & Industry Corporation (CASIC), China; Markus Jaeger, ArianeGroup, Germany; Randolph Kendall, The Aerospace Corporation, United States;

D2.1. Launch Vehicles in Service or in Development

October 25 2021, 15:15 — Sheikh Maktoum D

Co-Chair(s): Mihara Yorichika, Japan Aerospace Exploration Agency (JAXA), Japan; Randolph Kendall, The Aerospace Corporation, United States;

Rapporteur(s): Martin Sippel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-21.D2.1.2 (confirmed)

THE LATEST DEVELOPMENT STATUS OF H3 AND UPGRADE CONCEPT
Yorichika Mihara, Mitsubishi Heavy Industries, Ltd., Japan

IAC-21.D2.1.4 (confirmed)

ARIANE 6 LAUNCH SYSTEM DEVELOPMENT UPDATE
Stefano Bianchi, European Space Agency (ESA), Italy

IAC-21.D2.1.7 (confirmed)

LAUNCH VERIFICATION EFFICIENCIES
Akhil Gujral, The Aerospace Corporation, United States

D2.2. Launch Services, Missions, Operations, and Facilities

October 26 2021, 09:45 — Sheikh Maktoum D

Co-Chair(s): Francesco Santoro, Altec S.p.A., Italy; Sylvain Guédrón, Centre National d'Etudes Spatiales (CNES), France;
Rapporteur(s): Yves Gerard, Airbus Defence & Space, France;

IAC-21.D2.2.1 (confirmed)

A BOOST! TO THE EUROPEAN SPACE TRANSPORTATION ECOSYSTEM
Jorgen Bru, European Space Agency (ESA), France

IAC-21.D2.2.2 (confirmed)

CNES ACHIEVEMENTS ON ARIANE 6 DEVELOPMENT
Olivier Bugnet, Centre National d'Etudes Spatiales (CNES), France

IAC-21.D2.2.5 (confirmed)

GERMAN OFFSHORE SPACEPORT ALLIANCE – AGILE AND FLEXIBLE LAUNCH SOLUTIONS FOR SMALL LAUNCHERS
Andreas Stamminger, OHB System AG, Germany

IAC-21.D2.2.6 (confirmed)

ESRANGE SPACE CENTER – EVOLUTION OF THE MOST VERSATILE SPACE CENTER IN THE WORLD
Philip Pålsson, Swedish Space Corporation (SSC), Sweden

IAC-21.D2.2.7 (confirmed)

RESEARCH ON TECHNOLOGICAL DEVELOPMENT STRATEGY OF CHINA'S SEA LAUNCH SUPPORT SERVICE
Litian Xiao, Beijing Special Engineering Design and Research Institute (BSEDI), China

IAC-21.D2.2.10 (confirmed)

AN EXPLORATORY STUDY ON THE POSSIBILITY OF THE SMALLSAT LAUNCH SERVICE IN S. KOREA
Jungho Yang, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-21.D2.2.12 (confirmed)

LOCUS: SPACEPORT ESTABLISHMENT LOCATION DETERMINATION ASSISTANT
Derik Bhardwaj, University of Petroleum and Energy Studies, India

D2.3. Upper Stages, Space Transfer, Entry & Landing Systems

October 26 2021, 14:45 — Sheikh Maktoum D

Co-Chair(s): Oliver Kunz, RUAG Space, Switzerland; Bryan Smith, NASA Glenn Research Center, United States;

Rapporteur(s): Oleg Ventskovsky, Yuzhnoye SDO European Representation in Brussels, Ukraine;

IAC-21.D2.3.1 (confirmed)

ADVANCED EUROPEAN RE-ENTRY SYSTEM BASED ON INFLATABLE HEAT SHIELDS EFESTO PROJECT OVERVIEW: SYSTEM AND MISSION DESIGN AND TECHNOLOGY ROADMAP
Federico Trovarelli, Deimos Space SLU, Spain

IAC-21.D2.3.2 (confirmed)

VECTOR FIELD-BASED GUIDANCE DEVELOPMENT FOR LAUNCH VEHICLE RE-ENTRY VIA ACTUATED PARAFOL
Stefano Fari, German Aerospace Center (DLR), Germany

IAC-21.D2.3.4 (confirmed)

ARCHITECTURES FOR PARACHUTE TESTING
Jan Willem Jodehl, Delft Aerospace Rocket Engineering (DARE), The Netherlands

IAC-21.D2.3.5 (confirmed)

NOVEL ORBITAL ENERGY TARGETING IN MARTIAN ENTRY, DESCENT, AND LANDING
Shayna Hume, University of Colorado Boulder, United States

▣ IAC-21.D2.3.6 (video)

ROCKET LANDING GUIDANCE USING MODEL PREDICTIVE STATIC PROGRAMMING
Yushen Yan, National Key Laboratory of Aerospace Flight Dynamics, Northwestern Polytechnical University, Xi'an, China

IAC-21.D2.3.7 (confirmed)

ROBUST GUIDANCE AND CONTROL OF LIQUID-PROPELLANT ROCKETS FOR LANDING OF REUSABLE STAGES USING FUZZY PID CONTROL
Jihyoung Cha, Luleå University of Technology, Sweden

IAC-21.D2.3.8 (confirmed)

AUTONOMOUS UPPER STAGE GUIDANCE WITH ROBUST SPLASH-DOWN CONSTRAINT

Boris Benedikter, Sapienza University of Rome, Italy

IAC-21.D2.3.9 (confirmed)

AERODYNAMIC VEHICLE DESIGN, FLYING QUALITIES, AND MISSION ANALYSIS FOR A REUSABLE VTOL MICRO-LAUNCHER FIRST STAGE

Giovanni Medici, Deimos Space SLU, Spain

▣ IAC-21.D2.3.11 (video)

HTV-X DEVELOPMENT STATUS AND MISSION SCENARIO WITH OFFERING ON-ORBIT DEMONSTRATION OPPORTUNITY

Satoshi Noritake, Mitsubishi Heavy Industries Ltd. - Nagoya Aerospace Systems, Japan

IAC-21.D2.3.12 (confirmed)

CONCEPTUAL STUDY OF TECHNOLOGIES ENABLING NOVEL GREEN EXPENDABLE UPPER STAGES WITH MULTI-PAYLOAD/MULTI-ORBIT INJECTION CAPABILITY

Lily Blondel-Canepari, Università di Pisa (Unipi), Italy

D2.4. Future Space Transportation Systems

October 27 2021, 09:45 — Sheikh Maktoum D

Co-Chair(s): José Gavira Izquierdo, European Space Agency (ESA), The Netherlands; Nicolas Bérend, ONERA - The French Aerospace Lab, France;

Rapporteur(s): Emmanuelle David, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland;

▣ IAC-21.D2.4.1 (video)

FUTURE SPACE TRANSPORTATION SYSTEMS OF MHI WITH MODULAR ENGINE

Yuji Takaki, Mitsubishi Heavy Industries, Ltd., Japan
Aldo Scaccia, ESA - European Space Agency, Italy

IAC-21.D2.4.4 (confirmed)

A VIABLE AND SUSTAINABLE EUROPEAN PATH INTO SPACE – FOR CARGO AND ASTRONAUTS

Martin Sippel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.D2.4.5 (confirmed)

LAUNCH CAPACITY – PARAMETRIC ASSESSMENT OF GLOBAL CAPACITY FOR ACCESS TO SPACE

Ksenia Osipova, Skolkovo Institute of Science and Technology, Russian Federation

IAC-21.D2.4.6 (confirmed)

MISSION ANALYSIS, GNC AND ATD FOR REUSABLE LAUNCH VEHICLES WITHIN ASCENSION: MULTI-ORBIT MULTI-PAYLOAD INJECTION, RE-ENTRY AND SAFE DISPOSAL

Iñigo Alforja Ruiz, Politecnico di Milano, Italy

IAC-21.D2.4.7 (confirmed)

OPTIMIZATION OF THE DESIGN PARAMETERS FOR INTERORBITAL PROMISING TRANSPORTATION REUSABLE SYSTEMS

Olga Starinova, Samara National Research University (Samara University), Russian Federation

▣ IAC-21.D2.4.9 (video)

AN ANALYSIS INTO THE FEASIBILITY OF A LUNAR BASED QUENCH GUN LAUNCH SYSTEM FOR LUNAR-MARTIAN PAYLOADS.

Matthew Willson, The University of Sydney, Australia

▣ IAC-21.D2.4.10 (video)

AT CROSSROADS OF AERONAUTICS & SPACE: WHAT MATTERS FOR AEROSPACE VEHICLES FEATURING ULTRA-HIGH PERFORMANCE

Patrice Desvallées, France

D2.5. Technologies for Future Space Transportation Systems

October 27 2021, 14:45 — Sheikh Maktoum D

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-21.D2.5.1 (video)

STRATEGY OF LARGE-SCALE AND LOW-COST ACCESS TO SPACE IN THE FUTURE

XiaoWei WANG, China Academy of Launch Vehicle Technology (CALT), China

IAC-21.D2.5.2 (confirmed)

A FULL-SCALE SIMULATION AND ANALYSIS OF FORMATION FLIGHT DURING IN-AIR-CAPTURING

Sunayna Singh, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.D2.5.4 (confirmed)

TESTING COMBINED CRYOGENIC INSULATION AND THERMAL PROTECTION SYSTEMS FOR REUSABLE STAGES

Jascha Wilken, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Institute of Space Systems, Germany

IAC-21.D2.5.5 (confirmed)

MAGNETOHYDRODYNAMIC ENHANCED ENTRY SYSTEM FOR SPACE TRANSPORTATION (MEESST) AS A KEY ELEMENT FOR HUMAN SPACEFLIGHT MISSIONS

Manuel La Rosa Betancourt, Neutron Star Systems UG, Germany

▣ IAC-21.D2.5.6 (video)

THE CLIMBER-TETHER INTERFACE OF THE SPACE ELEVATOR

Dennis Wright, Independent Researcher, United States

IAC-21.D2.5.8 (confirmed)

ADVANCED NOZZLE CONCEPTS IN RETRO-PROPULSION APPLICATIONS FOR REUSABLE LAUNCH VEHICLE RECOVERY: A CASE STUDY

Giuseppe Scarlatella, Dresden University of Technology (DUT) / Technische Universität Dresden, Germany

IAC-21.D2.5.9 (confirmed)

APOGEE OPTIMISATION OF A HYBRID SOUNDING ROCKET

Kacper Kaczmarek, Students Space Association, Warsaw University of Technology, Poland

IAC-21.D2.5.10 (confirmed)

PRELIMINARY DESIGN OF A HOMING ROCKET USING IMAGE RECOGNITION

Dariusz Miedziński, Warsaw University of Technology (WUT), Poland

▣ IAC-21.D2.5.11 (video)

SYSTEM DESIGN AND SIMULATION ANALYSIS OF INTEGRATED VEHICLE FLUIDS

DONG Xiaolin, China Academy of Launch Vehicle Technology(CALT), China

IAC-21.D2.5.12 (confirmed)

ZERO BOIL OFF STORAGE OF LIQUID HYDROGEN APPLIED TO THE MARS TRANSFER VEHICLE

Nicholas Morris, Propulsion Research Center, University of Alabama in Huntsville, United States

IAC-21.D2.5.14 (confirmed)

OPTIMAL PRELIMINARY DESIGN OF HYPERSONIC WAVERIDER USING MULTIPLE METAHEURISTICS.

Élcio Jeronimo de Oliveira, Luleå University of Technology, Sweden

IAC-21.D2.5.16 (confirmed)

TRADE-OFF STUDY BETWEEN BIOMETHANE AND GREEN HYDROGEN FOR FUTURE LAUNCHERS PROPULSION

Pascal Noir, CNES, France

D2.6. Future Space Transportation Systems Verification and In-Flight Experimentation

October 28 2021, 09:45 — Sheikh Maktoum D

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-21.D2.6.1 (confirmed)

TOWARDS A REUSABLE FIRST STAGE DEMONSTRATOR: CALLISTO – TECHNICAL PROGRESSES & CHALLENGES

Sven Krummen, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-21.D2.6.2 (confirmed)

THE REUSABILITY FLIGHT EXPERIMENT – REFEX: FROM DESIGN TO FLIGHT – HARDWARE

Peter Rickmers, German Aerospace Center (DLR), Bremen, Germany

IAC-21.D2.6.3 (confirmed)

SOUNDING ROCKET RESEARCH INFRASTRUCTURE DEVELOPMENTS

Rainer Kirchhartz, German Aerospace Center (DLR), Germany

IAC-21.D2.6.4 (confirmed)

MAIN ACHIEVEMENTS OF THE SOUNDING ROCKET FLIGHT EXPERIMENT ATEK

Ali Gülhan, DLR (German Aerospace Center), Germany

IAC-21.D2.6.5 (confirmed)

STORT FLIGHT EXPERIMENT FOR HIGH SPEED TECHNOLOGY DEMONSTRATION

Ali Gülhan, DLR (German Aerospace Center), Germany

IAC-21.D2.6.8 (confirmed)

FLIGHT EXPERIMENT FOR A HIGH-TEMPERATURE SUPERCONDUCTING COIL

Jaime Martín Lozano, Cranfield University, United Kingdom

IAC-21.D2.6.9 (confirmed)

IN-FLIGHT AND GROUND TESTS OF AN INEXPENSIVE SUBORBITAL PERUN ROCKET AND ITS GREEN HYBRID ROCKET ENGINE IN PREPARATION FOR THE FIRST FULL SCALE FLIGHT IN 2022.

Robert Magiera, SpaceForest, Poland

IAC-21.D2.6.10 (video)

STUDY ON THE EFFECTIVENESS EVALUATION OF THE ATMOSPHERIC HYPER-SPEED VEHICLES

Huan Jiang, Science and Technology on Space Physics Laboratory, China

D2.7. Small Launchers: Concepts and Operations

October 28 2021, 14:45 — Sheikh Maktoum D

Co-Chair(s): Harry A. Cikanek, National Oceanic and Atmospheric Administration (NOAA), United States; Ulf Palmnäs, Swedish Space Corporation (SSC), Sweden;

Rapporteur(s): Florian Ruhhammer, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-21.D2.7.2 (confirmed)

THE SMALL LAUNCH VEHICLE SURVEY - A 2021 UPDATE (THE ROCKETS ARE FLYING)

Carlos Niederstrasser, Northrop Grumman Corporation, United States

IAC-21.D2.7.3 (confirmed)

HYIMPULSE – ACCESS TO SPACE WITH HYBRID PROPULSION

Goutham Karthikeyan, Hylmpulse Technologies GmbH, Germany

IAC-21.D2.7.4 (confirmed)

SMALLSATS BY THE NUMBERS 2021: GROWING SMALLSAT ACTIVITY AND ITS IMPLICATIONS FOR THE SMALL LAUNCH MARKET

Carissa Christensen, Bryce Space and Technology, United States

IAC-21.D2.7.6 (video)

MULTI-CRITERIA DECISION-MAKING PROCESS FOR SMALL LAUNCHER CONCEPTS

Sang-Hyeon Choi, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-21.D2.7.7 (confirmed)

A NOVEL DESIGN APPROACH FOR A REUSABLE VTOL MICRO LAUNCH VEHICLE

Rasmus Bergström, Spain

IAC-21.D2.7.9 (confirmed)

MICRO LAUNCHER OPTIMUM DESIGN USING THE SOLID ROCKET MOTOR S-50

Élcio Jeronimo de Oliveira, Luleå University of Technology, Sweden

IAC-21.D2.7.10 (confirmed)

INVESTIGATION OF MICROSATELLITE AIR-LAUNCH METHODS

Avichai Socher, Technion – Israel Institute of Technology, Israel

D2.8-A5.4. Space Transportation Solutions for Deep Space Missions

October 29 2021, 09:45 — Sheikh Maktoum D

Co-Chair(s): Kenneth Bruce Morris, Sierra Space, United States; Josef Wiedemann, MT Aerospace AG, Germany;

Rapporteur(s): Gerhard Schwehm, ESA (retired), The Netherlands;

IAC-21.D2.8-A5.4.2 (video)

TRAJECTORY DESIGN OF H3 ROCKET AND HTV-X FOR GATEWAY LOGISTICS MISSION

Reo Kashiwama, Mitsubishi Heavy Industries, Ltd., Japan

D2.9-D6.2. Emerging Global Space Ventures, including Reusability and other Innovations

October 29 2021, 13:30 — Sheikh Maktoum D

Co-Chair(s): Aline Decadi, European Space Agency (ESA), France; Charles E. Cockrell Jr., National Aeronautics and Space Administration (NASA), United States;

Rapporteur(s): Andrew Aldrin, Florida Institute of Technology, United States;

IAC-21.D2.9-D6.2.3 (confirmed)

SMALL LAUNCHERS - 2021 INDUSTRY SURVEY AND MARKET ANALYSIS

Erik Kulu, Estonia

IAC-21.D2.9-D6.2.5 (confirmed)

RURLS – (RE USEABLE ROCKET LAUNCH SYSTEM)

Jwalin Pandya, India

IAC-21.D2.9-D6.2.6 (video)

ANALYSIS OF MAINTAINABILITY REQUIREMENTS OF SPACECRAFT CONTROL SUBSYSTEM

Xiao LIU, Shanghai Aerospace Control Technology Institute (SACTI), China

D2.IP. Interactive Presentations - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM

October 28 2021, 13:15 — IP Area

Co-Chair(s): Christophe Bonnal, Centre National d'Etudes Spatiales (CNES), France; Jens Lassmann, ArianeGroup, Germany;

Rapporteur(s): Markus Jaeger, ArianeGroup, Germany;

IAC-21.D2.IP.5 (video)

REUSABLE EARTH-MOON TRANSFER STAGE DEPARTING FROM AND RETURNING BACK TO LEO SPACE STATION FOR MANNED LUNAR EXPLORATION FLIGHT

Shuting Wang, China Academy of Launch Vehicle Technology, China

D3. 19th 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 27 2021, 09:45 — Sharja D

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-21.D3.1.1 (confirmed)

THE FIRST HUMAN SETTLEMENT ON THE MOON BY 2045: A CASE STUDY

John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-21.D3.1.2 (confirmed)

VALUE-CHAIN ANALYSIS OF IN-SPACE SEGMENTS OF A CISLUNAR ARCHITECTURE

Loveneesh Rana, University of Luxembourg, Luxembourg

IAC-21.D3.1.3 (confirmed)

LUNANET: CATALYST FOR THE SPACE BASED ECONOMY?

Gerard Lebar, Jr., Northrop Grumman Corporation, United States

IAC-21.D3.1.4 (confirmed)

LUNAR LANDING NECESSARY BUILDING BLOCKS AND GOOD PRACTICES FOR A SUSTAINABLE DEVELOPMENT OF HUMAN LUNAR ACTIVITIES

Simone Paternostrò, Space Exploration Project group, Space Generation Advisory Council (SGAC), The Netherlands

IAC-21.D3.1.6 (confirmed)

ASTRAX LUNAR CITY DEVELOPMENT PROJECT 2021

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.D3.1.7 (confirmed)

ADVANCED PROPULSION AS A CORNERSTONE FOR SPACE EXPLORATION AND INTERSTELLAR LIVING

Tommaso Tonina, International Space University (ISU), Spain

IAC-21.D3.1.8 (confirmed)

SILICA AEROGEL: ISRU, ARCHITECTURE AND APPLICATIONS FOR MARS AND SPACE SETTLEMENTS

Kolemann Lutz, Mars University, United States

IAC-21.D3.1.9 (confirmed)

A NOVEL PLANETARY RESOURCE CLASSIFICATION FRAMEWORK TO ADVANCE SUSTAINABILITY IN LUNAR EXPLORATION MISSIONS

Arjumand Alvi, University of Houston, United States

IAC-21.D3.1.10 (confirmed)

OPPORTUNITIES FOR SPACE EXPLORATION UNDER THE UNITED NATIONS ACCESS TO SPACE 4 ALL INITIATIVE: ACHIEVEMENTS IN 2020-2021

Jorge Del Rio Vera, United Nations Office for Outer Space Affairs, Austria

IAC-21.D3.1.11 (confirmed)

EXPLORING PLANETARY SYSTEMS, IN THE SOLAR SYSTEM AND BEYOND. THE ENABLING POWER OF INTERNATIONAL COLLABORATION

Maria Antonietta Perino, Thales Alenia Space Italia, Italy

D3.2A. Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Systems

October 27 2021, 14:45 — Sharja D

Co-Chair(s): Paivi Jukola, Aalto University, Finland; Gary Barnhard, XISP-Inc, United States;

Rapporteur(s): Junjiro Onoda, ISAS/JAXA, Japan; Christopher Moore, National Aeronautics and Space Administration (NASA), United States;

IAC-21.D3.2A.2 (confirmed)

MOSAR: DEMONSTRATION OF MODULAR SPACECRAFT ASSEMBLY AND RECONFIGURATION

Pierre Letier, Space Applications Services, Belgium

IAC-21.D3.2A.3 (confirmed)

FEASIBILITY STUDY TO BUILD A DEPOT IN LOW EARTH ORBIT

Alexander Huschke, International Space University, France

IAC-21.D3.2A.4 (confirmed)

VACUUM TRANSPORT SYSTEM FOR MOON

Piotr Wrzeczoniarczyk, Wrocław University of Science and Technology, Poland

IAC-21.D3.2A.5 (confirmed)

EUROHAB: CONCEPT OF AN INFLATABLE HABITAT PAYLOAD AS SUPPORT TO CREWED MISSIONS ON THE LUNAR SURFACE OR MARS

Peter WEISS, Spartan Space, France

IAC-21.D3.2A.6 (confirmed)

CISLUNAR DISTRIBUTED ARCHITECTURES FOR COMMUNICATION AND NAVIGATION SERVICES OF LUNAR ASSETS

Andrea Pasquale, Politecnico di Milano, Italy

IAC-21.D3.2A.8 (confirmed)

LUNAR COMMS AND NAV INFRASTRUCTURE – FIRST DATA RELAY ORBITER LUNAR PATHFINDER, OPERATIONAL IN 2024, PAVES THE WAY FOR FULL CONSTELLATION BY 2030

Nelly Offord (Phillips), Surrey Satellite Technology Ltd (SSTL), United Kingdom

IAC-21.D3.2A.9 (confirmed)

TECHNOLOGY SYSTEMS FOR LUNAR INDUSTRIAL DEVELOPMENT

Peter Schubert, Indiana University - Purdue University Indianapolis, United States

IAC-21.D3.2A.11 (video)

DEVELOPMENT UPDATE ON MODUL INTERPLANETARY TRANSPORT SYSTEM (M-ITS) 2021 CASE STUDY OF THE LUNAR ORBITAL PLATFORM-GATEWAY (LOP-G)

Rok Kete, ILEWIG "EuroMoonMars", Slovenia

IAC-21.D3.2A.12 (confirmed)

HOW TO ACCELERATE THE PRODUCTION PROCESSES FOR THE SURVIVAL OF HUMAN COLONIES.

Lukasz Wilczynski, European Space Foundation, Poland

D3.2B. Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies

October 29 2021, 09:45 — Sharja D

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-21.D3.2B.6 (confirmed)

ORCHESTRATING SYMBIOSIS: FOUNDATIONAL TECHNOLOGIES FOR HUMAN AND ROBOTIC SHARED CONTROL

Gary Barnhard, XISP-Inc, United States

IAC-21.D3.2B.7 (confirmed)

MOONPORT: A COST-EFFECTIVE TRANSPORT SOLUTION FOR CISELUNAR SPACE

John Toop-Rose, International Space University (ISU), United Kingdom

IAC-21.D3.2B.9 (confirmed)

MULTIPURPOSE LOCOMOTION SYSTEM FOR CREW AND CARGO TRANSPORTATION ON THE LUNAR SURFACE

Margherita Marchi, Politecnico di Torino, Italy

IAC-21.D3.2B.10 (confirmed)

EROSS PROJECT - GROUND VALIDATION OF AN AUTONOMOUS GNC ARCHITECTURE TOWARDS FUTURE EUROPEAN SERVICING MISSIONS

Vincent DUBANCHET, Thales Alenia Space France, France

D3.3. Space Technology and System Management Practices and Tools

October 29 2021, 13:30 — Sharja D

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-21.D3.3.1 (confirmed)

COST ESTIMATION MODELING IN THE ERA OF 'NEW SPACE' COMMERCIAL SYSTEMS

John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States

IAC-21.D3.3.3 (confirmed)

DEMAND AND SUPPLY MATCHING BY THE ASTRAX LUNAR CITY BUSINESS COMMUNITY AND RESIDENCE CLUB

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.D3.3.4 (confirmed)

THE EFFECT OF INITIATING THE UAE SPACE AGENCY ON THE R&D ACTIVITIES IN THE SPACE SECTOR: A BIBLIOMETRICS STUDY

Khalfan Al Remeithi, UAE Space Agency, United Arab Emirates

IAC-21.D3.3.5 (confirmed)

TOWARDS MULTI-DOMAIN TRAFFIC MANAGEMENT

Kathiravan Thangavel, Royal Melbourne Institute of Technology (RMIT), Australia

IAC-21.D3.3.6 (confirmed)

THREE NATIONS COLLABORATE TO BUILD MARS SPACECRAFT FLIGHT SOFTWARE

Ibrahim Al Midfa, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.D3.3.9 (video)

THE ATTITUDE AND ORBIT CONTROL FAULT DIAGNOSIS AND BACKUP BRAKING DESIGN DURING MARS ORBIT INSERTION

Jianjun Feng, Shanghai Institute of Spaceflight Control Technology, China

IAC-21.D3.3.10 (confirmed)

IN-SPACE ECONOMY IN 2021: STATISTICAL OVERVIEW AND CLASSIFICATION OF COMMERCIAL ENTITIES

Erik Kulu, Estonia

D3.IP. Interactive Presentations - 19th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT

October 28 2021, 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; Maria Antonietta Perino, Thales Alenia Space Italia, Italy;

IAC-21.D3.IP.1 (confirmed)

ADVANCING ASTEROID SURFACE SIMULATIONS AND MISSIONS USING AN ON-ORBIT CENTRIFUGE LABORATORY WITHOUT REACTION WHEELS

Leonard Vance, University of Arizona, United States

IAC-21.D3.IP.3 (confirmed)

EMERGING-SPACE COUNTRIES AND THE FUTURE OF SPACE EXPLORATION

Ghanim Alotaibi, Kuwait

IAC-21.D3.IP.4 (confirmed)

UNIVERSAL BERTHING MECHANISM

Szymon Matkowski, Nexus Aurora, Poland

IAC-21.D3.IP.5 (confirmed)

ORBITAL CAN STATION

Koen Kegel, Nexus Aurora, The Netherlands

IAC-21.D3.IP.6 (confirmed)

LARGE ARTIFICIAL ROTATIONAL GRAVITY ENVIRONMENT

Gerry Aab, Nexus Aurora, South Africa

IAC-21.D3.IP.8 (confirmed)

APPLICATIONS FOR ARTIFICIAL INTELLIGENCE IN NEXT GENERATION DEEP SPACE EXPLORATION ROBOTICS

Rohaah Ahmed, Ryerson University, Canada

D4. 19th 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; Jan Kolar, Czech Space Office, Czech Republic;

D4.1. Innovative Concepts and Technologies

October 25 2021, 15:15 — Sharja D

Co-Chair(s): Roger X. Lenard, LPS, United States; Giorgio Saccoccia, Italian Space Agency (ASI), Italy;

IAC-21.D4.1.1 (confirmed)

TOWARD SELF-DRIVING INTERPLANETARY CUBESATS: THE ERC-FUNDED PROJECT EXTREMA

Gianfranco Di Domenico, Politecnico di Milano, Italy

IAC-21.D4.1.4 (confirmed)

SOLAR SAILS AS SUNSHADES AT THE SUN-EARTH L1 POINT COULD BE A REALISTIC SYSTEM TO CONTROL GLOBAL TEMPERATURE

Christer Fuglesang, Sweden

IAC-21.D4.1.5 (confirmed)

BENEFITS BEYOND: MINDFUL MISSIONS THROUGH AUTONOMOUS MOVEMENT THAT CREATE AN ADAPTIVE EXPERIENCE

Amanda Winters, United States

IAC-21.D4.1.6 (confirmed)

ROADMAP FOR AN INTERNATIONAL PLANETARY SUNSHADE (IPSS)

Tharshan Maheswaran, Institute of Space Systems, University of Stuttgart, Germany

IAC-21.D4.1.8 (confirmed)

ADVANCED APPROACH FOR SOLAR FLARE DEFLECTION

Nischith Raj, Ramaiah Institute of Technology, India

IAC-21.D4.1.9 (confirmed)

GEOSTATIONARY SPACE STATION: NECESSARY NEXT STEP FOR THE SPACE ECOSYSTEM

Matjaz Vidmar, The University of Edinburgh, United Kingdom

IAC-21.D4.1.10 (confirmed)

AVATARMEDIC: A 21ST CENTURY PARADIGM FOR PROVIDING MEDICAL CARE AND HEALTH ACCESS FOR SPACE EXPLORATION AND CREATING THE NEXT GENERATION SOLAR-SYSTEM WIDE MEDICAL CAPABILITIES FOR HUMANITY AND MULTI-PLANETARY SETTLERS

John Hanacek, United States

IAC-21.D4.1.11 (confirmed)

INITIATIVE OF DEVELOPMENT OF THE SOLAR SYSTEM ECONOMIC BLOC BY USING BLOCKCHAIN TECHNOLOGY

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.D4.1.12 (confirmed)

MODEL-BASED TECHNOLOGY ROADMAP FOR FUTURE ROBOTIC ON-ORBIT SERVICING

Aleksey Fedoseev, Skolkovo Institute of Science and Technology, Russian Federation

IAC-21.D4.1.13 (confirmed)

FUSING LIDAR AND SCIENTIFIC DATA TO CREATE A MULTIPURPOSE VIRTUAL REALTY TOOL FOR PLANETARY CAVE MISSION OPERATIONS

Christopher Patterson, McGill University, Canada

IAC-21.D4.1.14 (confirmed)

SELECTION OF ASTEROIDS WHICH ARE SUITABLE FOR COLLISION WITH MARS FOR THE PURPOSE OF TERRAFORMING

Neelabh Menaria, Ramaiah Institute of Technology, India

IAC-21.D4.1.15 (confirmed)

FROM SPACE EXPLORATION, TO SUBORBITAL SPACE TOURISM, TO LIVING AND WORKING IN SPACE: EVOLUTION OF THE MISSION REQUIREMENTS

Adriano V. Autino, Space Renaissance International, Italy

IAC-21.D4.1.16 (confirmed)

TRANSFER LEARNING IN SPACE EXPLORATION

Svetlana Hanson, NASA, United States

D4.2. Contribution of Moon Village to Solving Global Societal Issues

October 26 2021, 09:45 — Sharja D

Co-Chair(s): Bernadette Joy Detera, Keio University, Japan;

Rapporteur(s): Paivi Jukola, Aalto University, Finland;

IAC-21.D4.2.3 (confirmed)

MOON OLYMPICS: TECHNOLOGY READINESS AND ROADMAP

Bernadette Joy Detera, Keio University, Japan

IAC-21.D4.2.5 (confirmed)

PROPOSAL OF A FEASIBLE CAPACITY BUILDING ROADMAP TO INTEGRATE MEXICO TO THE GLOBAL EFFORTS FOR THE MOON EXPLORATION UNDER THE FRAMEWORK OF THE PESC PROJECT OF THE MOON VILLAGE ASSOCIATION AND ITS BENEFITS FOR OTHER LATIN-AMERICAN COUNTRIES.

Juan Carlos Mariscal, Dereum Labs S.A. de C.V., Mexico

IAC-21.D4.2.6 (confirmed)

INTRODUCTION OF A PRACTICAL EXAMPLE OF ASTRAX LUNAR CITY MAPPING WITH MINECRAFT AND ITS LINKAGE TO ECONOMIC ACTIVITIES ON EARTH

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.D4.2.7 (confirmed)

VALLEY OF THE MOON: SOCIETAL BENEFITS OF LUNAR EXPLORATION IN JORDAN

Sahba El-Shawa, European Space Agency (ESA), Jordan

IAC-21.D4.2.8 (confirmed)

ALGAE TEXTILE AND BIOPLASTIC KIT FOR SPACE TRAVEL AND SUSTAINABLE LIVING APPLICATIONS FOR THE FUTURE OF WELLBEING

Kristin Neidlinger, SENSOREE Therapeutic Biomedica, United States

IAC-21.D4.2.9 (confirmed)

NOTION ROBOTICS LOOKS FOR COLLABORATION FOR CONTRIBUTION ON MOON VILLAGE THROUGH VARIOUS OUREACH PROGRAMMES AND ALSO BUILDING IN NEW INNOVATION CONCEPTS USING SPACE ROBOTICS.

SANDHYA RAO, India

IAC-21.D4.2.10 (confirmed)

CONSIDERATION ON THE CREATION OF A CHICKEN EGG MARKET AT THE MOON VILLAGE

Taichi Yamazaki, ASTRAX, Inc., Japan

D4.3. Space Elevator as Transportation Infrastructure to Access Space

October 26 2021, 14:45 — Sharja D

Co-Chair(s): Peter Swan, International Space Elevator Consortium, United States; Yoji Ishikawa, Obayashi Corporation, Japan;

Rapporteur(s): Jerry Eddy, International Space Elevator Consortium, United States;

IAC-21.D4.3.1 (confirmed)

CHANGING THE ECONOMIC PARADIGM FOR BUILDING A SPACE ELEVATOR

Kevin Barry, LightBridge Strategic Consulting, United States

IAC-21.D4.3.2 (confirmed)

VISIONS OF MANY DEMAND SPACE ELEVATORS START NOW

Peter Swan, International Space Elevator Consortium, United States

IAC-21.D4.3.3 (confirmed)

SPACE ELEVATORS ENTERING ENGINEERING DEVELOPMENT - NOW

Peter Swan, International Space Elevator Consortium, United States

IAC-21.D4.3.4 (confirmed)

SPACE ELEVATORS THE GREEN ROAD TO SPACE

Jerry Eddy, International Space Elevator Consortium (ISEC), United States

IAC-21.D4.3.6 (confirmed)

SECONDARY TETHERS

Peter Swan, International Space Elevator Consortium, United States

IAC-21.D4.3.10 (video)

DYNAMIC ANALYSIS OF A THREE-BODY TETHERED SATELLITE SYSTEM WITH DEPLOYMENT/RETRIEVAL IN THREE-DIMENSIONAL

TENG HE, National Key Laboratory of Aerospace Flight Dynamics, Northwestern Polytechnical University, Xi'an, China

D4.4. Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond

October 28 2021, 09:45 — Sharja D

Co-Chair(s): Mae Jemison, 100 Year Starship, United States;

Rapporteur(s): Les Johnson, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, United States;

IAC-21.D4.4.1 (confirmed)

INTERSTELLAR PROBE – DESTINATION: UNIVERSE!

Ralph L. McNutt, Jr., The John Hopkins University, United States

IAC-21.D4.4.2 (confirmed)

INTERSTELLAR PROBE: HUMANITY'S EXPLORATION OF THE GALAXY BEGINS

Pontus Brandt, Johns Hopkins University Applied Physics Laboratory, United States

D4.5. Space Resources, the Enabler of the Earth-Moon Ecosphere

October 28 2021, 14:45 — Sharja D

Co-Chair(s): Roger X. Lenard, LPS, United States; Peter Swan, International Space Elevator Consortium, United States;

Rapporteur(s): Helen Tung, , United States;

IAC-21.D4.5.1 (confirmed)

IN-ORBIT REFUELING. TECHNICAL AND ECONOMIC FEASIBILITY OF MOON-MINED PROPELLANTS' TRANSPORTATION, STORAGE AND DISTRIBUTION SYSTEMS

Andrea Sommariva, SEE Lab - SDA Bocconi School of Management, Italy

IAC-21.D4.5.2 (confirmed)

THE GROWING STATE OF SPACE MINERAL RESOURCES

Roger X. Lenard, LPS, United States

IAC-21.D4.5.4 (confirmed)

AIRBUS - AIR LIQUIDE: COMMON VISION AND ROADMAP FOR A LUNAR INDUSTRIAL ECOSYSTEM

Pascal Barbier, Air Liquide, France

IAC-21.D4.5.8 (confirmed)

MANAGING LUNAR RESOURCES: CAN A PERPETUAL PURPOSE TRUST BE ONE OF THE VIABLE SOLUTIONS?

Héloïse Vertadier, Open Lunar Foundation, New Zealand

D4.IP. Interactive Presentations - 19th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE

October 28 2021, 13:15 — IP Area

Co-Chair(s): Bernadette Joy Detera, Keio University, Japan; Helen Tung, , United States;

IAC-21.D4.IP.1 (video)

DYNAMIC ANALYSIS OF SPACE ELEVATOR SYSTEM AFTER TETHER BREAKAGE

Feng Zhang, China Academy of Launch Vehicle Technology(CALT), China

D5. 54th 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, always a beginning!

October 26 2021, 09:45 — Al Ain B

Co-Chair(s): Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom; Alexander S. Filatyev, Central AeroHydrodynamic Institute (TsAGI), Russian Federation;

Rapporteur(s): Kaitlyn Holm, University of Pennsylvania, United States;

IAC-21.D5.1.2 (video)

IMPLEMENTATION OF THE SPACE PROJECT DOCUMENTATION STANDARD USING WEB-BASED APPLICATION SOFTWARE

Bina Pratomo, Indonesian National Institute of Aeronautics and Space (LAPAN), Indonesia

IAC-21.D5.1.3 (confirmed)

ROADMAP TO PROMOTE NEPAL'S CONTRIBUTION TO THE SPACE INDUSTRY BY NEPALESE SPACE RESEARCH ASSOCIATION

Anamol Mittal, International Space University (ISU), France

IAC-21.D5.1.4 (confirmed)

LESSONS LEARNED: NON-CONFORMANCES REDUCTION IN SATELLITES MANUFACTURING USING LEAN SIX SIGMA TOOLS.

Muna AlHammadi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.D5.1.5 (confirmed)

THE UTILIZATION OF MACHINE LEARNING ALGORITHMS TO ENHANCE AUTOMATIC MODEL-BASED SAFETY ANALYSIS (MBSA) TOOLS

Akram Abdellatif, German Aerospace Centre (DLR), Germany

IAC-21.D5.1.6 (confirmed)

THE DISTRIBUTION OF TRACE CONTAMINANTS IN THE MANNED SPACE STATION ATMOSPHERE

DMITRY OZEROV, IBMP, Russian Federation

IAC-21.D5.1.8 (confirmed)

THE ARCHITECTURE OF A SAFE LOW COST EARTH BASED LUNAR LANDING TEST BED FOR THE VALIDATION OF EXPERIMENTAL FLIGHT AND NEW TECHNOLOGIES

Michael Smat, University of Southern California, United States

D5.2. Knowledge management in the digital transformation

October 27 2021, 09:45 — Al Ain B

Co-Chair(s): Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom; Patrick Hambloch, The Planetary Society, Germany;

Rapporteur(s): Daniel Galarreta, Centre National d'Etudes Spatiales (CNES), France; Jeanne Holm, , United States;

IAC-21.D5.2.3 (confirmed)

RETHINKING KNOWLEDGE MANAGEMENT POST COVID-19

Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom

IAC-21.D5.2.5 (confirmed)

HOW TO CAPTURE, RETAIN AND TRANSFER KNOWLEDGE FROM PEOPLE: THE EUROPEAN SPACE AGENCY CASE

Gianluigi Baldesi, European Space Agency (ESA), France

IAC-21.D5.2.7 (confirmed)

FOR A KNOWLEDGE MANAGEMENT OF DATA 2021

Daniel Galarreta, Centre National d'Etudes Spatiales (CNES), France

IAC-21.D5.2.8 (confirmed)

SPACE AS AN ENABLER FOR SUSTAINABLE DIGITAL TRANSFORMATION: THE NEW SPACE RACE AND BENEFITS FOR NEWCOMERS

Christina Giannopapa, Ministry of Digital Governance of Greece, Greece

IAC-21.D5.2.9 (confirmed)

SPACE INDUSTRY: APPLICATIONS AND IMPLICATIONS OF DIGITAL TRANSFORMATION

Antonio Carlo, Tallinn University of Technology, Estonia

IAC-21.D5.2.11 (confirmed)

A NEW GENERAL DEEP LEARNING VALUE FLOW MODEL OPTIMIZATION. STAKEHOLDERS ANALYSIS APPLICATION TO HIGHER EDUCATION AND THE SPACE SECTOR.

Antoni Perez-Poch, Universitat Politècnica de Catalunya (UPC BarcelonaTech), Spain

D5.3. Prediction, Testing, Measurement and Effects of space environment on space missions

October 28 2021, 09:45 — Al Ain B

Co-Chair(s): Jens Schmidt, DLR (German Aerospace Center), Germany;

IAC-21.D5.3.1 (confirmed)

RESULTS FROM TESTING LOW COST, HIGH PERFORMANCE TERRESTRIAL PROCESSORS FOR LOW COST HIGH PERFORMANCE, AUTONOMOUS SPACE MISSIONS

Anita Bernie, KISPE Space Systems Limited, United Kingdom

▣ IAC-21.D5.3.4 (video)

VIBRATION TESTING OF THERMAL CAMERA FOR UAE LUNAR ROVER

Isaac Sarnoff, New York University Abu Dhabi, United Arab Emirates

IAC-21.D5.3.5 (confirmed)

MULTIPHYSICS SIMULATION ENVIRONMENT WITH MATERIAL PERFORMANCE STUDIES FOR MARTIAN STEM PROJECTS

Tanishka Roy, University of Petroleum and Energy Studies, India

D5.4. Cybersecurity in space systems, risks and countermeasures

October 29 2021, 13:30 — Al Ain A

Co-Chair(s): Julio Cesar Castillo-Urdapilleta, Agencia Espacial Mexicana (AEM), Mexico; Stefano Zatti, University of Rome "La Sapienza", Italy;

Rapporteur(s): Laurence Duquerroy, European Space Agency (ESA), The Netherlands; Julien Airaud, Centre National d'Etudes Spatiales (CNES), France;

IAC-21.D5.4.1 (confirmed)

INCREASING SECURITY IN SATELLITE NETWORKS

Klaus Schilling, University Wuerzburg, Germany

IAC-21.D5.4.2 (confirmed)

CYBERSECURITY TRENDS AND NEW CHALLENGES FOR THE SPACE SECTOR

Tanya Scalia, Italian Space Agency (ASI), Italy

IAC-21.D5.4.3 (confirmed)

SECURING OUTER SPACE THROUGH CYBER: RISKS AND COUNTERMEASURES

Antonio Carlo, Tallinn University of Technology, Estonia

IAC-21.D5.4.4 (confirmed)

SECURING SATELLITE DATA WITH ETHEREUM BLOCK-CHAIN TECHNOLOGY

Arumuga Ponni M, Ramaiah Institute of Technology, India

IAC-21.D5.4.5 (confirmed)

GROUND STATION AS A SERVICE: A SPACE CYBERSECURITY ANALYSIS

Evan Meyrick, Space Generation Advisory Council (SGAC), United Kingdom

IAC-21.D5.4.6 (confirmed)

FROM COMPLEX TO COMPLICATED: DEVELOPMENT OF A MODEL BASED SYSTEMS ENGINEERING AND CYBER SECURITY APPROACH FOR A QUANTUM KEY DISTRIBUTION NANOSATELLITE.

Douglas McNeil, Craft Prospect Ltd., United Kingdom

IAC-21.D5.4.8 (confirmed)

STANDARDISED ENCRYPTION AS A HARD REQUIREMENT FOR SPACE MISSIONS' COMMUNICATIONS LICENSING?

Edward Burger, Astrocast SA, Switzerland

IAC-21.D5.4.9 (confirmed)

THE SPACE STATION GATEWAY : THE SPACE CYBERSECURITY KILL CHAIN IN THE SECOPS FOR THE CREW AND THE SPACECRAFT FUNCTIONALITIES

Jamel Metmati, THALES Services, France

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 25 2021, 15:15 — Al Ain F

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, Campania Aerospace District, DAC, Italy;

IAC-21.D6.1.1 (confirmed)

STREAMLINED FAA COMMERCIAL LAUNCH AND REENTRY LICENSING, FINAL RULE

Wayne Monteith, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States

▣ IAC-21.D6.1.2 (video)

A CRITICAL EXAMINATION OF AUTONOMOUS FLIGHT SAFETY SYSTEMS FROM A COGNITIVE SYSTEMS ENGINEERING PERSPECTIVE: CHALLENGES, THEMES, AND OUTLYING RISKS

Jacob Keller, The Ohio State University, United States

IAC-21.D6.1.5 (confirmed)

HUMAN SPACEFLIGHT RISKS AND ISSUES

Sharvil Joglekar, India

D6.2-D2.9. Emerging Global Space Ventures, including Reusability and other Innovations

October 29 2021, 13:30 — Sheikh Maktoum D

Co-Chair(s): Aline Decadi, European Space Agency (ESA), France; Charles E. Cockrell Jr., National Aeronautics and Space Administration (NASA), United States;

Rapporteur(s): Andrew Aldrin, Florida Institute of Technology, United States;

IAC-21.D6.2-D2.9.4 (confirmed)

RLV APPLICATIONS: CHALLENGES AND BENEFITS OF NOVEL TECHNOLOGIES FOR SUSTAINABLE MAIN STAGES

Mateusz Gulczyński, DLR (German Aerospace Center), Germany

D6.3. Enabling safe commercial spaceflight: vehicles and spaceports

October 29 2021, 09:45 — Al Ain F

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, Campania Aerospace District, DAC, Italy;

IAC-21.D6.3.4 (confirmed)

MAINTAINING THE HEALTH OF PILOTS AND CREW

Tomoko Imaizumi, Japan

IAC-21.D6.3.8 (confirmed)

STUDY OF THE SELECTION OF LOCATION FOR COMMERCIAL SPACEPORTS IN JAPAN

Taichi Yamazaki, ASTRAX, Inc., Japan

E1. IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM

Coordinator(s): Lisa Antoniadis, Astrocast SA, Switzerland; Seyed Ali Nasser, Space Generation Advisory Council (SGAC), Canada;

E1.1. Ignition - Primary Space Education

October 25 2021, 15:15 — Sharja A

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), The Netherlands; Matteo Emanuelli, Airbus Defence and Space, Germany;

IAC-2021.E1.1.6

BRINING SPACE SCIENCE CLOSER TO THE K-12 STUDENTS IN NEPAL
Manisha Dwa, Nepal Astronomical Society (NASO), Nepal

IAC-21.E1.1.7 (confirmed)

USE OF SPACE ANALOG MISSIONS AS AN EDUCATIONAL TOOL IN PRIMARY SCHOOLS

Chloé Carrière, Space Innovation, Swiss Federal Institute of Technology in Lausanne, Switzerland

IAC-21.E1.1.8 (confirmed)

IMPACT OF ONLINE SCHOOL IN ACADEMIC EVOLUTION AND INVOLVEMENT IN STEAM EDUCATIONAL ACTIVITIES OF CHILDREN AGED 7 TO 14 YEARS OLD IN THE UNITED KINGDOM, EGYPT, ROMANIA AND PAKISTAN

Alina Vizireanu, Space Generation Advisory Council (SGAC), United Kingdom

E1.2. Lift Off - Secondary Space Education

October 26 2021, 09:45 — Sharja A

Co-Chair(s): Seyed Ali Nasser, Space Generation Advisory Council (SGAC), Canada; Christopher Vasko, European Space Agency (ESA), The Netherlands;

IAC-21.E1.2.1 (confirmed)

COLLABORATING WITH CUBESATS: THE FORMATION OF THE WOLFPACK CUBESAT DEVELOPMENT TEAM

Kevin Simmons, BLUECUBE Aerospace, United States

IAC-21.E1.2.2 (confirmed)

YOUNG GIRLS, LITTLE SCIENCE AND FULL DREAMS

Daniela Fernanda González Chávez, Universidad Nacional Autónoma de México (UNAM), Mexico

IAC-21.E1.2.3 (confirmed)

SHE SPACE INTERNATIONAL, FACILITATING ACCESS TO ACADEMIC SPACE EDUCATION AND STATE OF THE ART TECHNOLOGIES: TOWARD ACHIEVING UNITED NATIONS SDG'S 4, 5, 13 AND 17.

Shimrit Maman, Ben-Gurion University of the Negev, Israel

IAC-21.E1.2.4 (confirmed)

"QUANTORIUM" - MODERN EXAMPLE OF UPWARD MOBILITY FOR THE PROMOTION OF HIGH SCHOOL STUDENTS IN AEROSPACE TECHNOLOGIES

Vera Mayorova, Bauman Moscow State Technical University, Russian Federation

IAC-21.E1.2.5 (confirmed)

WHEN EDUCATION AND RESEARCH MATCH. YISS - YOUTH ISS SCIENCE: A SPACE PROGRAM TO JOIN UNIVERSITIES AND SCHOOLS

Germana Galoforo, Italian Space Agency (ASI), Italy

IAC-21.E1.2.7 (confirmed)

GIS4SCHOOLS - IMPROVING STEAM EDUCATION IN SECONDARY SCHOOLS THROUGH THE DEVELOPMENT AND CO-CREATION OF NEW METHODOLOGIES FOR TEACHING TO AND EXPLOITATION BY PUPILS OF GIS PRODUCTS RELATED TO CLIMATE IMPACT ON THE ENVIRONMENT

Alessandra Vernile, EURISY, France

IAC-21.E1.2.9 (confirmed)

METEORITE ANALYSIS AS AN EDUCATIONAL TOOL AT THE SHARJAH ACADEMY FOR ASTRONOMY, SPACE SCIENCES, AND TECHNOLOGY

Ilias Fernini, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.E1.2.10 (confirmed)

IDEIA SPACE'S STEAM PROGRAM, AN INNOVATIVE EDUCATIONAL PROJECT IN BRAZIL

Rafael Lobo, University of Brasilia, Brazil

▶ IAC-21.E1.2.11 (video)

A STUDENT-LED, VIRTUALLY-DEVELOPED SUBORBITAL PAYLOAD: INVESTIGATING THE STRUCTURE OF POLYURETHANE FOAM IN MICROGRAVITY

Shawna Pandya, Canada

E1.3. On Track - Undergraduate Space Education

October 26 2021, 14:45 — Sharja A

Co-Chair(s): Hubert Diez, CNES, France; Camille Alleyne, NASA, United States;

Rapporteur(s): Michal Kunes, , Czech Republic;

▶ IAC-21.E1.3.3 (video)

TRAINING OF AEROSPACE ENGINEERING PROFESSIONALS IN DEVELOPING COUNTRIES USING LOW-COST AND OPEN SOURCE TOOLS

Avid Roman-Gonzalez, Business on Engineering and Technology S.A.C. (BE Tech), Peru

IAC-21.E1.3.4 (confirmed)

THE USE OF SPACE DATA BY UNDERGRADUATE STUDENTS TO PREDICT AND ANALYSE AURORAL DISPLAYS IN THE ARCTIC

Carol Norberg, Umeå University, Sweden

IAC-21.E1.3.5 (confirmed)

LIFE ON THE MOON: PROMOTING HUMAN-CENTERED DESIGN PERSPECTIVES IN SPACE EDUCATION

Melodie Yashar, Art Center College of Design, United States

IAC-21.E1.3.6 (confirmed)

1000 FUTURE MEXICAN SCIENTISTS: MOTIVATIONS FOR SPACE PROJECTS, PERSPECTIVE, AND GOALS.

Cecilia Guadalupe Torres Perea, Universidad Nacional Autónoma de México (UNAM), Mexico

IAC-21.E1.3.7 (confirmed)

THE SHARJAH ACADEMY FOR ASTRONOMY, SPACE SCIENCES, AND TECHNOLOGY SPACE SCIENCES EDUCATION AND OUTREACH PROGRAM

Ilias Fernini, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.E1.3.8 (confirmed)

ACADEMIC ENGLISH IN SPACE EDUCATION: A COURSE FOR NONNATIVE MASTER STUDENTS

Olga Ovchinnikova, Keldysh Institute of Applied Mathematics of RAS, Russian Federation

IAC-21.E1.3.12 (confirmed)

STUDENT SPACE MISSIONS – FACILITATING PATHWAYS TO SUCCESS FOR NEXT GENERATION PROFESSIONALS IN SPACE RESEARCH THROUGH DEVELOPMENT AND TESTING INNOVATIONS

Edgar Bering, University of Houston, United States

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25–29 October 2021 | Dubai, United Arab Emirates

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IAC-21.E1.3.13 (confirmed)

LESSONS LEARNED FROM SMART MACHINES-CTIC-UNI PROGRAM FOR CAPACITY BUILDING IN PERUVIAN UNDERGRADUATES AND PERSPECTIVES IN THE NEAR FUTURE
George Steve Fajardo Soria, Universidad Nacional de Ingenieria, Peru

IAC-21.E1.3.14 (confirmed)

BARCELONA ZERO G CHALLENGE: AN EDUCATIONAL PERSPECTIVE FROM A MEDITERRANEAN TECHNICAL UNIVERSITY
Antoni Perez-Poch, Universitat Politècnica de Catalunya (UPC BarcelonaTech), Spain

E1.4. In Orbit - Postgraduate Space Education

October 27 2021, 09:45 — Sharja A

Co-Chair(s): David Spencer, The Aerospace Corporation, 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-21.E1.4.1 (confirmed)

KEYNOTE: UNISAT PLATFORM AND LUNAR-MARS MISSION IN GAUSS
Filippo Graziani, G.A.U.S.S. Srl, Italy

IAC-21.E1.4.2 (confirmed)

SPACE LAW AND POLICY IN POSTGRADUATE EDUCATION: THE EXAMPLE OF THE INTERNATIONAL SPACE UNIVERSITY
Tanja Masson-Zwaan, International Institute of Air and Space Law, Leiden University, The Netherlands

IAC-21.E1.4.3 (confirmed)

TECHNOLOGY IN SPACE EDUCATION AS A POSTGRADUATE PROGRAM PREPARING TEACHERS FOR THE FUTURE
Ayelet Weizman, Israel

IAC-21.E1.4.4 (confirmed)

THE INCORPORATION OF POSTGRADUATE STUDENTS INTO MARS SCIENCE AT THE NATIONAL SPACE SCIENCE AND TECHNOLOGY CENTER AND UNITED ARAB EMIRATES UNIVERSITY
Claus Gebhardt, National Space Science and Technology Center (NSSTC), United Arab Emirates

IAC-21.E1.4.5 (video)

LEGAL EDUCATION IN SPACE LAW: CHINA AS A CASE STUDY
YONGLIANG YAN, Beijing Jiaotong University, China

IAC-21.E1.4.6 (confirmed)

ENHANCING POST-GRADUATE EDUCATION: FROM STUDENTSHIP TO MENTORSHIP USING PROJECT-BASED APPROACH
Olga Bannova, University of Houston, United States

IAC-21.E1.4.7 (confirmed)

FROM THE EDUCATIONAL GAP IN THE SPACE ECONOMY TO THE ESTABLISHMENT OF A SPACE ECONOMY NETWORK. THE INNOVATIVE AND WORLDWIDE PLAN OF THE ISPACESCHOOL.
Adrian Saez, IspaceSchool, Germany

IAC-21.E1.4.8 (confirmed)

BENEFITS OF ESA GRAVITY-RELATED HANDS-ON PROGRAMMES FROM THE STUDENTS' PERSPECTIVE
Katie Savva, University of Warwick, United Kingdom

E1.5. Enabling the Future - Developing the Space Workforce

October 27 2021, 14:45 — Sharja A

Co-Chair(s): Kathleen Coderre, Lockheed Martin (Space Systems Company), United States; Olga Zhdanovich, Modis for European Space Agency, The Netherlands;

Rapporteur(s): Michal Kunes, Czech Republic; Hubert Diez, CNES, France;

IAC-21.E1.5.1 (confirmed)

THE ROLE OF THE UAE NEW SPACE SCIENCE CENTERS IN PROMOTING STEM EDUCATION
Ilias Fernini, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), United Arab Emirates

IAC-21.E1.5.2 (confirmed)

DEVELOPMENT OF A COMPETENCE ECOSYSTEM FOR THE FUTURE SPACE WORKFORCE: STRATEGIES, PRACTICES AND RECOMMENDATIONS FROM INTERNATIONAL MASTER PROGRAMS IN NORTHERN SWEDEN
Victoria Barabash, Luleå University of Technology, Sweden

IAC-21.E1.5.3 (confirmed)

ESTABLISHING A SPACE MEDICINE AND LIFE SCIENCES OUTREACH & EDUCATION PROGRAM USING A VIRTUAL GLOBAL WEBINAR SERIES
Ivy Mayor, Space Generation Advisory Council (SGAC), Sweden

IAC-21.E1.5.6 (confirmed)

CURATING A NATIONAL STUDENT PRESENCE IN THE SPACE SECTOR: A COMPARATIVE CASE STUDY OF STUDENTS FOR THE EXPLORATION AND DEVELOPMENT OF SPACE IN CANADA
Chimira Andres, Students for the Exploration and Development of Space (SEDS-Canada), Canada

IAC-21.E1.5.11 (confirmed)

POLISPACE: A STUDENT APPROACH FOR ENABLING THE GROWTH OF THE ITALIAN SPACE WORKFORCE
Francesco Ventre, Politecnico di Milano, Italy

IAC-21.E1.5.13 (confirmed)

SUCCESS CASE OF THE SGAC OPEN-COURSE INTRODUCTION TO SPACE ENGINEERING, AS A MEDIUM FOR CAPACITY BUILDING IN EDUCATION AND SPACE WORKFORCE DEVELOPMENT IN EMERGING COUNTRIES OF CENTRAL AMERICA
Angel Arcia Gil, Space Generation Advisory Council (SGAC), Panama

E1.6. Calling Planet Earth - Space Outreach to the General Public

October 28 2021, 09:45 — Sharja A

Co-Chair(s): Jessica Culler, NASA Ames Research Center, United States; Nelly Ben Hayoun, SETI Institute, United Kingdom;

Rapporteur(s): Remco Timmermans, International Space University (ISU), United Kingdom; Frank Friedlaender, Lockheed Martin Space Systems Company, United States;

IAC-21.E1.6.1 (confirmed)

A MODERN SPACE AGENCY NEEDS A MODERN COMMUNICATION IN A CONSTANTLY EVOLVING SOCIAL, MOBILE, VIDEO LANDSCAPE
Philippe Willekens, European Space Agency (ESA), France

IAC-21.E1.6.2 (confirmed)

AUGMENTED REALITY (AR) AS A COMMUNICATION TOOL IN SPACE OUTREACH: A CASE OF STUDY IN A MEXICAN CUBESAT MISSION.
María Inés Mendoza Rodríguez, Universidad Panamericana de Ciudad de México, Mexico

IAC-21.E1.6.4 (confirmed)

"IF YOU CAN'T SEE IT, YOU CAN'T BE IT" - OUTREACH CHALLENGES IN PREPARING THE YOUNG GENERATION FOR A CAREER IN THE SPACE INDUSTRY
Remco Timmermans, International Space University (ISU), United Kingdom

IAC-21.E1.6.5 (confirmed)

SPACE FOR EARTH AND CLIMATE CHANGE – PUBLIC VALUE IN A RISK SOCIETY
Gianluigi Baldesi, European Space Agency (ESA), France

IAC-21.E1.6.7 (confirmed)

SPACEPLUS, TRANSFERRING THE COVID TREAT TO COLLABORATION OPPORTUNITY THROUGH SPACE LANGUAGE
Sajjad Ghazanfarinia, Iran

E1.7. New Worlds - Non-Traditional Space Education and Outreach

October 28 2021, 14:45 — Sharja A

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, STScl, United States; Kaori Sasaki, JAXA, Japan;

IAC-21.E1.7.1 (confirmed)

LAUNCHPAD: THE WORLD'S FIRST PRE-INCUBATION ACCELERATOR PROGRAM FOR SPACE TECHNOLOGY VENTURE CREATION

Edvard Foss, Technical University of Denmark - National Space Institut (DTU Space), Denmark

IAC-21.E1.7.3 (confirmed)

LESSONS FROM THE GOLDEN AGE AS AN EDUCATIONAL CATALYST FOR THE ARAB-ISLAMIC SPACE ENDEAVOUR AND BEYOND

Joachim Reinhold, Germany

IAC-21.E1.7.5 (confirmed)

DEVELOPMENT AND VERIFICATION OF A LOW-BUDGET CLINOSTAT BUILT BY UNDERGRADUATE STUDENTS IN A DEVELOPING COUNTRY

Katherine Herrera, Guatemala

IAC-21.E1.7.6 (confirmed)

DEVELOPING THE FIRST ACADEMIC PROGRAMS DEDICATED TO MAKING LIFE MULTIPLANETARY TO ADVANCE THE SPACE WORKFORCE

Kolemann Lutz, Mars University, United States

IAC-21.E1.7.10 (confirmed)

MAKING ASTRAX ACADEMY ONLINE AND MULTILINGUAL

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.E1.7.12 (confirmed)

DEVELOPING A NOVEL SPACE CAMP MODEL TO INSPIRE THE NEXT GENERATION OF SPACE PROFESSIONALS

Matias Campos, SIDERALIS Foundation, Ecuador

IAC-21.E1.7.13 (confirmed)

SPACE EXPLORERS: PUBLIC ENGAGEMENT THROUGH IMMERSIVE STORYTELLING

Stephane Ruel, Felix & Paul Studios, Canada

E1.8. Hands-on Space Education and Outreach

October 29 2021, 09:45 — International Student Zone

Co-Chair(s): Lyn Wigbels, American Astronautical Society (AAS), 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-21.E1.8.1 (confirmed)

ESCAPE ROOMS, AN EFFECTIVE HANDS-ON APPROACH FOR YOUTH SPACE OUTREACH

Raveen Sidhu, University of British Columbia, Canada

IAC-21.E1.8.2 (video)

THE EFFECTS OF USING MINECRAFT TO TEACH CHILDREN ABOUT SPACE

Haruto Kurono, Japan

IAC-21.E1.8.4 (confirmed)

NANOSTAR PROJECT: STUDENT CHALLENGES & TOOLS – DEVELOPING COLLABORATIVE TOOLS FOR NANOSATELLITE EDUCATION AND CAPACITY BUILDING

Jorge Bordalo Monteiro, Centre for Mechanical and Aerospace Science and Technologies (C-MAST), Portugal

IAC-21.E1.8.5 (confirmed)

OUTREACH AND SCIENTIFIC RESULTS WITH THE LARGEST NETWORK OF BACKYARD ASTRONOMERS

Franck Marchis, SETI Institute, United States

E1.9. Space Culture – Public Engagement in Space through Culture

October 29 2021, 13:30 — Sharja A

Co-Chair(s): Franck Marchis, SETI Institute, United States; Mike Garrett, University of Manchester, United Kingdom;

Rapporteur(s): Carol Oliver, University of New South Wales, Australia; Nahum Romero, KOSMICA, Germany; Priyanka Das Rajkakati, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France;

IAC-21.E1.9.2 (confirmed)

CENTERING INDIGENOUS VOICES AND RESISTING COLONIALISM IN SPACE EXPLORATION AND POLICY

Frank Tavares, Massachusetts Institute of Technology (MIT), United States

IAC-21.E1.9.4 (confirmed)

THE ENTREPRENEURIAL VISION WITH A MASSIVE TRANSFORMATIVE PURPOSE: CREATING FULLY-IMMERSIVE EXPERIENTIAL SIMULATION-BASED EDUTAINMENT WITH "LETS GET S.T.E.A.M.E.D" VIRTUAL WORKSHOPS AND SIMULATION EVAS USING EXPONENTIAL TECHNOLOGIES.

Susan Ip-Jewell, United States

IAC-21.E1.9.5 (video)

ASSESSING OPPORTUNITIES FOR WOMEN IN SPACE

Vridhi Kamath, Ramaiah Institute of Technology, India

IAC-21.E1.9.6 (confirmed)

A QUANTITATIVE STUDY OF MENTAL HEALTH OF GRADUATE & UNDERGRADUATE STUDENTS IN STEM FOCUSING ON SPACE SCIENCES AND ENGINEERING DURING THE COVID-19 PANDEMIC

Sarah Cader, Osmania University College of Science, India

IAC-21.E1.9.8 (confirmed)

FOSTERING UNIVERSAL HUMAN RESOURCES AND SUPER NEWTYPES FOR THE SPACE AGE

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.E1.9.9 (confirmed)

WHAT WE MAKE SPACE TRAVEL TO BE - A STUDY ON THE FRAMING OF SPACE IN TERMS OF SOCIETAL VALUES AND MEANINGS

Ayla Wolf, Germany

IAC-21.E1.9.10 (confirmed)

POTENTIAL FUTURE PLAN OF SPACE IZAKAYA AS A PLACE TO CREATE NEW PRIVATE SPACE BUSINESS

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.E1.9.11 (confirmed)

INCLUSION OF INDIGENOUS PEOPLES IN AEROSPACE TECHNOLOGIES.

Alvaro Regules, National Technology of Mexico (TecNM), Mexico

IAC-21.E1.9.12 (confirmed)

FOSTERING DIVERSITY, EQUITY AND CAPACITY BUILDING IN THE SPACE WORKFORCE: THE NEXT GENERATION'S PERSPECTIVE

Benjamin Greaves, StarLab Oasis, United States

IAC-21.E1.9.13 (confirmed)

CYBER-COSMOS: A NEW CITIZEN SCIENCE CONCEPT IN A DARK SKY DESTINATION

Domingos Barbosa, Instituto de Telecomunicações (Portugal), Portugal

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25–29 October 2021 | Dubai, United Arab Emirates

E1.IP. Interactive Presentations - IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM

October 28 2021, 13:15 — IP Area

Co-Chair(s): Kevin Stube, The Planetary Society, United States; Jessica Culler, NASA Ames Research Center, United States;

IAC-21.E1.IP.2 (confirmed)

HALF A DECADE OF EXO-RO - THE NATIONAL ROVERS COMPETITION FOR HIGH-SCHOOLERS
Virgiliu Pop, Romanian Space Agency (ROSA), Romania

IAC-21.E1.IP.3 (confirmed)

THE SPACE NEWSLETTER: HOW DIGITAL PUBLISHING IN THE SPACE INDUSTRY AND ACADEMIA CAN SUPPORT CULTURE AND EDUCATION IN THE MEDITERRANEAN REGION
Antonia Russo, University Mediterranea of Reggio Calabria, Italy

IAC-21.E1.IP.4 (confirmed)

TELECOMMUTE TO THE MOON: A CASE STUDY IN MANAGING UNDERGRADUATE ENGINEERING PROJECTS WITHOUT ACCESS TO RESOURCES
Sam Bunka, University of British Columbia, Canada

IAC-21.E1.IP.8 (confirmed)

SPACE EDUCATION, SPACE RESEARCH AND SPACE INDUSTRY: CONNECTING A FRAGMENTED CHAIN
Bram de Winter, VU Amsterdam, The Netherlands

IAC-21.E1.IP.9 (confirmed)

THE INNOVATION CHALLENGE: A NEW APPROACH TO PAYLOAD DEVELOPMENT
Laura Champion, Lockheed Martin (Space Systems Company), United States

IAC-21.E1.IP.10 (confirmed)

INSPIRING GENERATIONS THROUGH EMIRATES MARS MISSION'S (EMM) SCIENCE OUTREACH PROGRAMS
Moza Al Sharif, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-21.E1.IP.12 (confirmed)

FASTRATOPLAT, SHORT TIME PROGRAM TO PROVIDE OPERATION EXPERIENCE TO STUDENTS' TEAM PROJECTS
Sajjad Ghazanfarinia, Iran

E2. 49th STUDENT CONFERENCE

Coordinator(s): Marco Schmidt, University of Applied Sciences Würzburg-Schweinfurt, Germany; Franco Bernelli-Zazzera, Politecnico di Milano, Italy;

E2.1. Student Conference - Part 1

October 25 2021, 15:15 — Dubai C

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-21.E2.1.3 (confirmed)

NAVIGATION GUIDANCE AND CONTROL ALGORITHMS VALIDATION OF RENDEZVOUS AND DOCKING USING ROBOTIC MANIPULATORS
Harika Pothina, Indian Space Research Organization (ISRO), India

IAC-21.E2.1.4 (confirmed)

NO MORE SPACE IN SPACE? QUANTIFICATION OF THE SPACE-ENABLED ECONOMIC VALUE AT RISK AND ASSESSMENT OF THE ADR BUSINESS CASE
Davide Vittori, Politecnico di Bari, Italy

IAC-21.E2.1.9 (confirmed)

SEARCHING FOR A MARTIAN SOIL SIMULANT IN UAE & AL HAJAR MOUNTAINS
Mira Fikri, University of Sharjah, United Arab Emirates

IAC-21.E2.1.10 (confirmed)

A FEASIBILITY STUDY OF AN AUTONOMOUS UAV FOR MARS EXPLORATION FOR THE ESA MARS SAMPLE RETURN MISSION
Peter Healy, UCL, United Kingdom

IAC-21.E2.1.11 (confirmed)

STORM: A SEMI-ANALYTICAL ORBIT PROPAGATOR FOR ASSESSING THE COMPLIANCE WITH MARS PLANETARY PROTECTION REQUIREMENTS
Hugo Lévy, ISAE-Supaero University of Toulouse, France

E2.2. Student Conference - Part 2

October 26 2021, 09:45 — Dubai D

Co-Chair(s): Marco Schmidt, University of Applied Sciences Würzburg-Schweinfurt, 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-21.E2.2.1 (video)

DEVELOPMENT OF THE HYBRID MAGNETIC ATTITUDE CONTROL SYSTEM FOR THE VIOLET NANOSATELLITE MISSION
Alex DiTommaso, University of New Brunswick (UNB), Canada

IAC-21.E2.2.6 (confirmed)

FLIGHT TRAJECTORIES DETERMINATION AND ANALYSIS TO THE TRANS-NEPTUNIAN OBJECT 2012 VP113 IN 2026
Vladislav Zubko, Space Research Institute (IKI), Russian Academy of Sciences (RAS), Russian Federation

IAC-21.E2.2.7 (confirmed)

PYTHON STATISTICAL DECISION-MAKING ASSISTANT PLUG-IN FOR QGIS USING COPERNICUS DATA TO MINIMIZE AGRICULTURAL OVERPRODUCTION.
Nadia Weronika Brzostowicz, Polytechnic University of Madrid, Spain

IAC-21.E2.2.8 (confirmed)

EFFECTS OF SPACEFLIGHT ON SPERM FUNCTION AND INTEGRITY ON ANIMALS AND HUMANS: A SYSTEMATIC REVIEW.
Khulood Ahrari, Mohammed Bin Rashid University of Medicine and Health Sciences, United Arab Emirates

IAC-21.E2.2.9 (confirmed)

A FIRST STEP TOWARDS INTERSTELLAR FUSION PROPULSION
Mewantha Aurelio Kaluthantrige Don, University of Strathclyde / Mechanical and Aerospace Engineering, United Kingdom

IAC-21.E2.2.11 (confirmed)

SATELLITE DATA COMPLETION
Aveline Cloitre, Centre National d'Etudes Spatiales (CNES), France

IAC-21.E2.2.12 (confirmed)

AN ULTRA-LOW PROFILE HIGH-GAIN ANTENNA POINTING MECHANISM FOR MICRO LUNAR ROVER PLATFORMS
Sam Bunka, University of British Columbia, Canada

E2.3-GTS.4. Student Team Competition

October 26 2021, 14:45 — Dubai D

Co-Chair(s): Emmanuel Zenou, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France; Andrea Jaime, Universitat Politècnica de Catalunya (UPC), Spain;

Rapporteur(s): Kathleen Coderre, Lockheed Martin (Space Systems Company), United States;

IAC-21.E2.3-GTS.4.1 (confirmed)

TRACZ - TESTING ROBOTIC APPLICATIONS FOR CATCHING IN ZERO-G EXPERIMENT AS A PAYLOAD ONBOARD THE 26TH REXUS SUBORBITAL ROCKET
Adrianna Graja, Wroclaw University of Science and Technology, Poland

IAC-21.E2.3-GTS.4.2 (confirmed)

A SELF ADAPTING WHEEL SYSTEM FOR SPACE EXPLORATION ROVERS

Viduranga Landers, Sri Lanka

IAC-21.E2.3-GTS.4.3 (confirmed)

STUDENT PROJECT OF A SMALL RE-ENTRY VEHICLE FOR DELIVERING SCIENTIFIC CARGOES FROM ORBITAL STATIONS
Veronika Pavlyuchenko, Bauman Moscow State Technical University, Russian Federation

IAC-21.E2.3-GTS.4.4 (confirmed)

DRACO MISSION: MEASURING RADIATION DOSES ABOUT THE EARTH-MOON LAGRANGIAN POINTS
Marion Burnichon, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France

IAC-21.E2.3-GTS.4.6 (confirmed)

DESIGN, DEVELOPMENT AND TESTING OF AN ELECTRICALLY POWERED ROCKET FOR VERTICAL LANDING OPTIMIZATION.
Arnaud Ballande, Ecole Polytechnique, France

IAC-21.E2.3-GTS.4.7 (confirmed)

O-ZONE: CFCS, PM, NOX, SOX DYNAMIC SAMPLING IN THE STRATOSPHERE
Federico Toson, University of Padova, Italy

IAC-21.E2.3-GTS.4.9 (confirmed)

DESIGN AND MANUFACTURING OF A SMALL LOW-COST LUNAR ROVER EQUIPPED WITH REMOTE AND AUTONOMOUS MOVEMENT, SURFACE MAPPING AND ENERGY MANAGEMENT ORIENTED TOWARDS DEMOCRATIZING LUNAR RESEARCH
Nicolás de Jong, LEEM-UPM, Spain

IAC-21.E2.3-GTS.4.10 (confirmed)

SIMULTANEOUS INTERFEROMETRIC TRACKING OF A MULTI-SATELLITE GEOSYNCHRONOUS CONSTELLATION FOR GEOSAR MISSIONS
Jorge Nicolas-Alvarez, Universitat Politecnica de Catalunya (UPC), Spain

IAC-21.E2.3-GTS.4.11 (confirmed)

LEARNINGS FROM IMPLEMENTATION OF A DETUMBLING ALGORITHM FOR A NANOSATELLITE.
Shivam Hire, College of Engineering Pune, India

IAC-21.E2.3-GTS.4.12 (confirmed)

PRELIMINARY DESIGN OF A LUNAR GNSS CONSTELLATION
Florian Fillol, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, France

IAC-21.E2.3-GTS.4.13 (confirmed)

OSCAR-QUBE: INTEGRATED DIAMOND-BASED QUANTUM MAGNETIC FIELD SENSOR FOR SPACE APPLICATIONS
Jaroslav Hruby, Institute for Material Research (IMO), IMOMEK, IMEC, Belgium

IAC-21.E2.3-GTS.4.14 (confirmed)

ROBOT-HUMAN EXPLORATION AND INTERFACES DURING THE CHILL-ICE ANALOGUE LUNAR MISSION CAMPAIGN
Marc Heemskerck, Vrije Universiteit Amsterdam, The Netherlands

IAC-21.E2.3-GTS.4.16 (confirmed)

DETAILED DESIGN OF IONSAT: A STATION-KEEPING MISSION AT ALTITUDES BELOW 300KM
Aurélien Sicsik, Ecole Polytechnique, France

IAC-21.E2.3-GTS.4.18 (video)

AUTONOMOUS NAVIGATION APPLIED TO THE IGLUNA LUNAR ANALOGUE MISSION ON COLLABORATIVE ROBOTIC SYSTEMS
Maximilien DREIER, ISAE-Supaero University of Toulouse, France

E2.4. Educational Pico and Nano Satellites

October 27 2021, 09:45 — Dubai D

Co-Chair(s): Xiaozhou Yu, Dalian University of Technology (DUT), China; Franco Bernelli-Zazzera, Politecnico di Milano, Italy;

IAC-21.E2.4.1 (video)

A NOVEL HIGH-PRECISION INTEGRATED OPTICAL ATTITUDE SENSOR FOR MICRO/NANO SATELLITES
Hongjing Cao, Tsinghua University, China

IAC-21.E2.4.2 (confirmed)

STRATHCUBE: A STUDENT CUBESAT THAT ENCOURAGES THE SUSTAINABLE USAGE OF SPACE
Ciaran Jenkins, University of Strathclyde / Mechanical and Aerospace Engineering, United Kingdom

IAC-21.E2.4.3 (confirmed)

GUIDELINES FOR DEVELOPING A HIGH FIDELITY CUBESAT THERMAL ANALYSIS
Irina Stroica, Concordia University, Canada

IAC-21.E2.4.4 (confirmed)

FLIPSAT-1: OPTIMIZING RADIATION HARDENING FOR A SPACE ENVIRONMENT
Theodore Ouyang, The Weiss School, United States

IAC-21.E2.4.5 (video)

ON-ORBIT HIGH-ACCURACY CALIBRATION METHOD OF REMOTE SENSING CAMERA BASED ON STAR TARGETS
Chen Xuedi, Tsinghua University, China

IAC-21.E2.4.6 (video)

AN INTEGRATED ATTITUDE DETERMINATION AND CONTROL SYSTEM WITH SMALL VOLUME AND HIGH PERFORMANCE FOR NANOSATELLITES
Shaoyan Fan, Tsinghua University, Beijing, China

IAC-21.E2.4.8 (confirmed)

EXPERIENCE IN THE DEVELOPMENT AND OPERATION OF THE NANOSATELLITES FOR SPACE WEATHER MONITORING
Valeriia Melnikova, Bauman Moscow State Technical University, Russian Federation

IAC-21.E2.4.9 (confirmed)

THE WORMSAIL CUBESAT - AN INTERNATIONAL EDUCATIONAL PROJECT TO ELEVATE SPACE SCIENCE AND EDUCATION
Daniel Robson, University of Nottingham, United Kingdom

IAC-21.E2.4.12 (confirmed)

EFFECT OF SOLAR SAIL ON ANTENNA PARAMETERS AND LINK TIME OF NANOSATELLITE
Juhi Wani, College Of Engineering, Pune, India

IAC-21.E2.4.13 (confirmed)

ATTITUDE DETERMINATION USING A SYSTEM OF SENSORS AND UKF FOR A SOLAR SAILING NANOSATELLITE
Kishan Patel, College Of Engineering, Pune, India

IAC-21.E2.4.14 (confirmed)

DESIGN AND ANALYSIS OF RADIATIVE FIN IN MATLAB FOR SOLAR SAILING NANOSATELLITE
Mahesh Anandkalwas, College of Engineering, Pune, India

IAC-21.E2.4.15 (confirmed)

AMAJ, AN INTERNATIONAL CUBESAT PROJECT TO FORM A CONSTELLATION WITH STUDENTS' POCKETQUBES
Sajjad Ghazanfarinia, Iran

IAC-21.E2.4.16 (confirmed)

A CUBESAT PLATFORM FOR MONITORING SPACE WEATHER
Benjamin Purvis, BLUECUBE Aerospace, United States

E3. 34th 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 26 2021, 09:45 — Al Ain A

Co-Chair(s): Isabelle Duvaux-Bechon, ESA - European Space Agency, France; Dumitru-Dorin Prunariu, Commission d'Astronautique de l'Academie Roumaine, Romania;

Rapporteur(s): Alexander Soucek, Austrian Space Forum, Austria; Peter Stubbe, DLR (German Aerospace Center), Germany;

IAC-21.E3.1.1 (confirmed)
STRENGTHENING COOPERATION FOR GLOBAL HEALTH: MAPPING CONSENSUS ON AN AI ETHICAL FRAMEWORK FOR SPACE MEDICINE APPLICATIONS
Eleni Antoniadou, United States

IAC-21.E3.1.2 (video)
PROTECTING WILDLIFE AND BIODIVERSITY: THE SIGNIFICANT ROLE OF EARTH OBSERVATION DATA
Anne-Sophie Martin, Sapienza University of Rome, Italy

IAC-21.E3.1.3 (confirmed)
SPACE FOR THE ENVIRONMENT: INTERNATIONAL COOPERATION FOR ENVIRONMENTAL INITIATIVES
Milica Milosev, Serbia

IAC-21.E3.1.4 (confirmed)
SPACE FOR EQUALITY, DIVERSITY AND INCLUSION IN MIDDLE EAST: CHALLENGES AND SOLUTIONS
Shabnam Yazdani, Space Generation Advisory Council (SGAC) CSC, Austria

IAC-21.E3.1.5 (confirmed)
STRATEGIES FOR INTEGRATING SPACE APPLICATIONS TO ACHIEVE SDGS IN DEVELOPING COUNTRIES
Giulia Costella, International Space University (ISU), France

IAC-21.E3.1.7 (confirmed)
EGYPTIAN SPACE AGENCY CURRENT ACTIVITIES
Mohammed Iraqi, Egyptian Space Agency (EgSA), Egypt

IAC-21.E3.1.8 (confirmed)
UNLOCKING THE POTENTIAL OF SPACE DATA - 'TRANSLATOR' INSTITUTIONS EMPOWERING AFRICAN FARMING COMMUNITIES TO ADDRESS CLIMATE CHANGE ENABLING A SPACE2030 AGENDA
Mariam Naseem, Arizona State University, United States

IAC-21.E3.1.11 (confirmed)
AGRICULTURE IOT SMALL SATELLITE CONSTELLATION FOR THE AMERICAS, A NEW PARADIGM IN CLIMATE CHANGE RESILIENCE EFFORTS
Luis Monge, Inter-American Institute for Cooperation on Agriculture (IICA), Costa Rica

E3.2. The future of space exploration and innovation

October 26 2021, 14:45 — Al Ain A

Co-Chair(s): Marc Haese, DLR, German Aerospace Center, Germany; Nicolas Peter, International Space University (ISU), France;

Rapporteur(s): Devanshu Ganatra, International Institute of Space Law (IISL), India;

IAC-21.E3.2.3 (video)
CONCEPTUALIZING AN EVOLVING SPACE GOVERNANCE SYSTEM
Lindsey Wiser, Arizona State University, United States

IAC-21.E3.2.4 (confirmed)
INVESTMENTS SECURITY IN THE CONTEXT OF SPACE IN SITU MANUFACTURING AND OWNERSHIP RIGHTS
Maciej Pauli, Poland

IAC-21.E3.2.5 (confirmed)
ETHICAL EXPLORATION AND THE ROLE OF PLANETARY PROTECTION
Frank Tavares, NASA Ames Research Center, United States

IAC-21.E3.2.6 (confirmed)
EXPLORATION VERSUS EXPLOITATION OF SPACE: A NEW PARADIGM SHIFT
Jacques Arnould, Centre National d'Etudes Spatiales (CNES), France

IAC-21.E3.2.11 (video)
ASSESSING THE BOTTLENECKS FOR A SUSTAINABLE FRAMEWORK FOR APAC REGIONAL COOPERATION FOR SPACE EXPLORATION
Harlee Quizzagan, Space Generation Advisory Council (SGAC), The Philippines

IAC-21.E3.2.12 (confirmed)
INTEROPERABILITY AND OPEN STANDARDS FOR FUTURE LUNAR EXPLORATION
Giuliana Rotola, Space Generation Advisory Council (SGAC), Italy

IAC-21.E3.2.13 (confirmed)
ADOPTING A UNIVERSAL TAX REGIME FOR OUTER SPACE EXPLORATION
Alexander Ezenagu, College of Law - Hamad Bin Khalifa University, Qatar

IAC-21.E3.2.14 (confirmed)
GLOBAL EXPANSION VS. SPACE EXPLORATION, A FULL CHANGE OF PARADIGM
Adriano V. Autino, Space Renaissance International, Italy

E3.3. Space Economy - New models and economic approaches for private space ventures, with an emphasis on the needs of emerging space nations

October 28 2021, 09:45 — Al Ain A

Co-Chair(s): Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States;
Rapporteur(s): Magda Cocco, Vieira de Almeida & Associados, Portugal; Mahulena Hofmann, University of Luxembourg, Luxembourg;

IAC-21.E3.3.1 (confirmed)
ANALYSIS OF SYSTEMIC CAPABILITIES AND ITS RELATION WITH THE DEVELOPMENT OF INNOVATIVE SPACE SECTOR IN EMERGING COUNTRIES: THE CASE OF HISPANIC AMERICA
Tania María Robles Hernández, Agencia Espacial Mexicana (AEM), Mexico

IAC-21.E3.3.2 (confirmed)
REVIEW AND RECOMMENDATIONS ON REGIONAL COLLABORATION DEVELOPMENT TO BUILD THE ASEAN SPACE ECONOMY
Sindhu Paramasivam, India

IAC-21.E3.3.6 (confirmed)
IS EUROPE READY TO ENGAGE IN THE TRANSFORMING LAUNCHER MARKET?
Serge Plattard, University College London (UCL), United Kingdom

E3.4. Assuring a Safe, Secure and Sustainable Environment for Space Activities

October 29 2021, 09:45 — Al Ain A

Co-Chair(s): Bernhard Schmidt-Tedd, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Jana Robinson, The Prague Security Studies Institute, Czech Republic;

Rapporteur(s): Pieter Van Beekhuizen, The Netherlands;

IAC-21.E3.4.2 (confirmed)

EUSTM: EUROPEAN STEPS TOWARDS SPACE TRAFFIC MANAGEMENT

Alberto Águeda Maté, GMV Aerospace & Defence SAU, Spain

IAC-21.E3.4.3 (confirmed)

SMALL SATELLITES CONSTELLATIONS PHENOMENA AND SPACE TRAFFIC MANAGEMENT IN TERMS OF STATE OF ART, FUTURE PERSPECTIVES AND POSSIBLE WEAKNESSES

David Bravo Berguño, Thales Alenia Space Italia, Italy

IAC-21.E3.4.4 (confirmed)

FROM CRADLE TO GRAVE: ESA CLEAN SPACE'S APPROACH TO SPACE SUSTAINABILITY

Sahba El-Shawa, European Space Agency (ESA), Jordan

IAC-21.E3.4.5 (confirmed)

WHAT'S IN A NORM? DIPLOMATIC MECHANISMS AND STRATEGIES FOR DEVELOPING INTERNATIONAL NORMS OF SPACE BEHAVIOR

Robin Dickey, The Aerospace Corporation, United States

IAC-21.E3.4.6 (confirmed)

A MODERN MODEL OF SPACE LAW CREATION: WHAT CAN COPUOS LEARN FROM THE ITU?

Audrey Allison, The Boeing Company, United States

IAC-21.E3.4.7 (confirmed)

PROPOSAL TO ADD A SPACE ECONOMICS SUBCOMMITTEE TO THE UN OFFICE FOR OUTER SPACE AFFAIRS' COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE (COPUOS IN UNOOSA)

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.E3.4.8 (confirmed)

PREVENTION AND MITIGATION OF INTERFERENCE AFFECTING EARTH EXPLORATION SATELLITE SERVICES (EESS) AND GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS).

Jorge Ciccorossi, ITU, Switzerland

IAC-21.E3.4.9 (confirmed)

ATTRIBUTION AS THE BASIS FOR ANTI-SATELLITE WEAPONS BAN

Andrew Kurzrok, Space Generation Advisory Council (SGAC), United States

E3.6. Economics of Procurement in Space Contracting

October 28 2021, 14:45 — Al Ain A

Co-Chair(s): Mohsen Al Awadhi, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates; Geraldine Naja, ESA, France;

Rapporteur(s): Pieter Van Beekhuizen, The Netherlands; Karina Miranda Sanchez, ESA, The Netherlands;

IAC-21.E3.6.2 (confirmed)

TRAINS, STATIONS, AND CARTS - A FRAMEWORK FOR SPACE PROCUREMENT INFRASTRUCTURE

Kevin Barry, LightBridge Strategic Consulting, United States

IAC-21.E3.6.4 (confirmed)

EMERGING PROGRAM : ENCOURAGES STARTUPS AND SMES TO PARTICIPATE IN NATIONAL SPACE TECHNOLOGY PROJECT WHICH PROMISES ADAPTION INTO NATIONAL SPACE SYSTEM IN ORBIT

Mi-jin Yoo, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-21.E3.6.5 (confirmed)

WHAT ARE THE DRIVING FORCES BEHIND SPACE TECHNOLOGY CLUSTERS?

Alan Webb, Commercial Space Technologies Ltd., United Kingdom

IAC-21.E3.6.6 (confirmed)

STIMULATING NATIONAL PRIVATE SECTOR GROWTH IN EMERGING SPACE NATIONS

Alyssa Frayling, know.space, United Kingdom

IAC-21.E3.6.7 (confirmed)

SPACE STARTUP BUSINESS MODEL BASED ON PUBLIC NEEDS : FROM LAND MANAGEMENT TO COMMERCIALIZATION AND FURTHER SPACE RESOURCE WITHIN INTERNATIONAL COOPERATION.

Mi-jin Yoo, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-21.E3.6.8 (confirmed)

BUILDING SECTOR DEVELOPMENT INFRASTRUCTURE FOR 21ST-CENTURY SPACE ECONOMY: REFLECTIONS ON SLOVAK EXPERIENCE

Michal Brichta, Slovak Investment and Trade Development Agency (SARIO), Slovak Republic

IAC-21.E3.6.9 (confirmed)

CREATION OF SPACE HUBS: THE CASE OF BRASILIA

Victor Baptista, Universidade de Brasília, Brazil

E3.IP. Interactive Presentations - 34th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS

October 28 2021, 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-21.E3.IP.1 (confirmed)

THE BRAZILIAN SPACE PROGRAM DEVELOPMENT COMMITTEE: ORIGIN AND ACHIEVEMENTS.

Alexsandro Souza de Lima, Brazil

IAC-21.E3.IP.3 (confirmed)

THE CASE FOR MARTIAN INDEPENDENCE

Katarzyna Malinowska, Kozminski University, Poland

E4. 55th IAA HISTORY OF ASTRONAUTICS SYMPOSIUM

Coordinator(s): A. Ingemar Skoog, Germany; Kerrie Dougherty, Australia; Otfried G. Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Sandra Haeuplik-Meusburger, TU Wien, Austria;

E4.1. Memoirs & Organisational Histories

October 28 2021, 09:45 — Ajman A

Co-Chair(s): Sandra Haeuplik-Meusburger, TU Wien, Austria; Niklas Reinke, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

Rapporteur(s): Brian Jirout, Boeing, United States; Philippe Cosyn, Belgium;

IAC-21.E4.1.2 (confirmed)

KATHRINE JOHNSON (1919-2020), THE WOMAN WHO QUIETLY CHANGED SPACE EXPLORATION FOREVER THROUGH PRECISION AND PERSISTENCE

Raveen Sidhu, University of British Columbia, Canada

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25-29 October 2021 | Dubai, United Arab Emirates

IAC-21.E4.1.4 (confirmed)

ACADEMICIAN V.P. GLUSHKO AND NAMES ON THE MAP OF MOON
Vladimir Sudakov, JSC NPO Energomash, Russian Federation

IAC-21.E4.1.6 (confirmed)

GALINA BALASHOVA: THE FIRST SPACE ARCHITECT
Cheila Arruda, Portugal

IAC-21.E4.1.7 (confirmed)

ERNST FASAN - PIONEER OF SPACE LAW
Hannes Mayer, Karl Franzens Universität Graz, Austria

IAC-21.E4.1.11 (confirmed)

THE 1926 GREENWOOD LAKE MAIL ROCKET EXPERIMENTS: THE
WORLD'S FIRST FLOWN LIQUID-FUEL ROCKET PLANES?
Frank H. Winter, National Air and Space Museum, United States

E4.2. Scientific and Technical Histories

October 28 2021, 14:45 — Ajman A

Co-Chair(s): Vera Pinto Gomes, European Commission, Belgium;
Hannes Mayer, Karl Franzens Universität Graz, Austria;

Rapporteur(s): Karlheinz Rohrwild, Hermann-Oberth-Raumfahrt
Museum e.V., Germany; Piero Messina, European Space Agency
(ESA), France; Randy Liebermann, , United States;

IAC-21.E4.2.1 (confirmed)

FRENCH ANTI-AIRCRAFT ROCKETS OF WORLD WAR I
*Philippe Jung, Association Aéronautique & Astronautique de France
(3AF), France*

IAC-21.E4.2.4 (confirmed)

THE MISSING CALCULATION BEHIND THE ORIGINAL "KARMAN
LINE" DEFINITION – A CREDIBLE HYPOTHESIS
Nicolas Bérend, ONERA - The French Aerospace Lab, France

IAC-21.E4.2.5 (confirmed)

REFLECTIONS ON EARLY LUNAR BASE DESIGN
Sandra Haeuplik-Meusburger, TU Wien, Austria

IAC-21.E4.2.6 (confirmed)

SOUTH KOREA'S MISSILE GUIDELINE AND THE DIPLOMATIC
RELATION WITH THE U.S., 1958-1978
*Hyoungh Joon An, Science and Technology Policy Institute, Korea,
Republic of*

IAC-21.E4.2.7 (confirmed)

„WE AFRICANS ARE DANCING“ – THE APOLLO PROGRAM
REFLECTED IN AFRICAN CULTURE
Virgiliu Pop, Romanian Space Agency (ROSA), Romania

IAC-21.E4.2.9 (confirmed)

THE APOLLO-SOYUZ TEST PROJECT - ITS LEGACY 46 YEARS ON
Amer Khan, United Arab Emirates

IAC-21.E4.2.11 (video)

THE THIRD INTERNATIONAL SUN-EARTH EXPLORER, THE FIRST
HALO ORBITER
David Dunham, KinetX, Inc., United States

E4.3. History of Middle Eastern Contribution to Astronautics and Astronomy

October 29 2021, 09:45 — Ajman A

Co-Chair(s): Otfried G. Liepack, National Aeronautics and Space
Administration (NASA), Jet Propulsion Laboratory, United States;
Ilias Fernini, Sharjah Academy for Astronomy, Space Sciences and
Technology (SAASST), United Arab Emirates;

Rapporteur(s): Tal Inbar, The Fisher Institute for Air and Space
Strategic Studies, Israel; Kerrie Dougherty, , Australia;

IAC-21.E4.3.1 (video)

THE LONG WAY TO UNDERSTAND THE SOLAR SYSTEM, THE
MEDIÉVAL ISLAMIC GOLDEN AGE CONTRIBUTION
Manola Romero, 3AF, France

IAC-21.E4.3.3 (confirmed)

DAVID – EARLY 1990S ISRAELI EARTH OBSERVATION SATELLITE
PROJECT
*Tal Inbar, The Fisher Institute for Air and Space Strategic Studies,
Israel*

IAC-21.E4.3.4 (confirmed)

THE ORIGIN OF THE ASTRONAUT PROGRAM IN ISRAEL
*Tal Inbar, The Fisher Institute for Air and Space Strategic Studies,
Israel*

IAC-21.E4.3.5 (video)

THE MIDDLE EAST CONTRIBUTION TO MARS EXPERIMENTATION
AND EXPLORATION : THE UNITED ARAB EMIRATES SPACE
INNOVATION
Jamel Metmati, THALES Services, France

IAC-21.E4.3.6 (confirmed)

THE MIDDLE EAST CONTRIBUTION TO MARS EXPERIMENTATION
AND EXPLORATION : THE UNITED ARAB EMIRATES SPACE
INNOVATION
Jamel Metmati, THALES Services, France

E5. 32nd IAA SYMPOSIUM ON SPACE AND SOCIETY

Coordinator(s): Geoffrey Languedoc, Canadian Aeronautics
& Space Institute (CASI), Canada; Olga Bannova, University of
Houston, United States;

E5.1. Space Architecture: Habitats, Habitability, and Bases

October 25 2021, 15:15 — Al Ain B

Co-Chair(s): Olga Bannova, University of Houston, United States;

Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria;
Rapporteur(s): Anne-Marlene Rüede, Ecole Polytechnique
Fédérale de Lausanne (EPFL), Switzerland;

IAC-21.E5.1.1 (confirmed)

DIVERSIFYING THE CONCEPT OF ANALOGUE MISSIONS TO
EXPLORE AND EVALUATE NEW CONCEPTS FOR FUTURE SPACE
MISSIONS
Mona Nasser, University of Plymouth, United Kingdom

IAC-21.E5.1.3 (confirmed)

D-MARS OFF-GRID HABITATION STUDY
Hilel Rubinstein, D-MARS, Israel

IAC-21.E5.1.4 (confirmed)

CONCEPT OF SPACE SYSTEM ARCHITECTURE WITH HABITABLE
BASE UTILIZATION FOR COMPLEX EXPLORATION OF THE MOON
*Vera Mayorova, Bauman Moscow State Technical University, Russian
Federation*

IAC-21.E5.1.6 (confirmed)

PROJECT OLYMPUS: ISRU MATERIAL CONSTRUCTIBILITY AS A
FRAMEWORK FOR HABITAT STRUCTURAL DESIGN
Melodie Yashar, Art Center College of Design, United States

IAC-21.E5.1.7 (confirmed)

GROWTH AS AN ALTERNATIVE APPROACH TO THE
CONSTRUCTION OF EXTRA-TERRESTRIAL HABITATS
Monika Brandić Lipińska, Newcastle University, United Kingdom

IAC-21.E5.1.9 (confirmed)

NEW APPROACHES TO HABITABILITY: THE INTERNATIONAL SPACE
STATION ARCHAEOLOGICAL PROJECT
Justin Walsh, Chapman University, United States

E5.2. Is Space R&D Truly Fostering A Better World For Our Future?

October 26 2021, 14:45 — Al Ain B

Co-Chair(s): Olga Bannova, University of Houston, United States; Kerry Leonard, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States;
Rapporteur(s): Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria;

▶ IAC-21.E5.2.1 (video)

MAIN CHANNELS FOR SPACE TECHNOLOGY TRANSFERS: AN INTERNATIONAL REVIEW
Mattia Olivari, Organisation for Economic Co-operation and Development (OECD), France

IAC-21.E5.2.2 (confirmed)

LEARNING FROM ASYNCHRONOUS, SPACE-BASED TELEMEDICINE SYSTEMS TO SUPPORT SPINOFFS FOR EARTH-BASED HEALTHCARE
Golda Nguyen, Massachusetts Institute of Technology (MIT), United States

IAC-21.E5.2.3 (confirmed)

HOW BUSINESS ARE WORKING TOGETHER TO DELIVER NASA/JPL-DESIGNED VENTILATORS TO THE WORLD IN THE FIGHT AGAINST COVID-19
Peter Lee, Brown University, United States

IAC-21.E5.2.4 (confirmed)

OPPORTUNITIES ON NATIONAL SECURITY, AGRICULTURE DEVELOPMENT, AND SOCIAL EQUITY THROUGH SPACE TECHNOLOGIES IN MEXICO
Guadalupe Espinoza Gastelum, Space Generation Advisory Council (SGAC), United States

IAC-21.E5.2.6 (confirmed)

THE HRE SCIENCE DATA CENTER: A NEW ENTITY FOR STORING, VALORISING AND PUBLISHING THE DATA COMING FROM ESA EXPERIMENTS.
Daniel Luque, Universidad Politécnica de Madrid, Spain

IAC-21.E5.2.7 (confirmed)

SCIENTIFIC ADVANCEMENTS AND SPACE EXPLORATION, UNCERTAINTIES AND UNKNOWN AS A DRIVING FORCE?
Bram de Winter, VU Amsterdam, The Netherlands

IAC-21.E5.2.9 (confirmed)

BRIDGING THE DIGITAL DIVIDE: AN ANALYTICAL APPROACH TO HOW PROLIFERATED LOW-EARTH ORBIT (PLEO) CONSTELLATIONS WILL BRING MILLIONS OF HUMANS INTO THE INFORMATION AGE
Joshua Ingersoll, Space Policy Institute, George Washington University, United States

E5.3. Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach

October 27 2021, 14:45 — Al Ain B

Co-Chair(s): Sasha Alexander, Western Sydney University, Australia; Tibor Balint, Art Center College of Design, United States;
Rapporteur(s): Yuri Tanaka, Tokyo University of the Arts, Japan;

IAC-21.E5.3.4 (confirmed)

MESSAGES TO THE ABOVE: LOOKING AT ART FROM THE SKY
Fiore Grazia Maria, EURISY, France

IAC-21.E5.3.5 (confirmed)

INSPIRATION FOR MODERN ART AND FASHION DESIGNS FROM SPACE EXPLORATION AND THE ICONIC SPACESUIT OF SPACEX
Eva Yi-Wei Chang, University of Science & Technology, Taipei

IAC-21.E5.3.6 (confirmed)

SPACE FASHION AND SPACE CULTURE IN THE AGE OF SPACE TRAVEL AND THE POSSIBILITIES OF "SPACE HAGOROMO"
Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.E5.3.7 (confirmed)

VIRTUAL FUTURISTIC ANALOGUE MISSIONS TO DRIVE METHODOLOGICAL INNOVATION FOR CLINICAL RESEARCH FOR SPACE MISSION AND EARTH
Mona Nasser, University of Plymouth, United Kingdom

IAC-21.E5.3.8 (confirmed)

SKY LAKE – MOON ENVIRONMENT DESIGN
Aoife van Linden Tol, Feral Events, United Kingdom

▶ IAC-21.E5.3.10 (video)

THE GENDER GAP AND ITS IMPACT IN MANGA, ANIME AND OTHER SPACE CREATIONS
Ayako Kurono, Japan

E5.4. Space Assets and Disaster Management

October 29 2021, 09:45 — Al Ain B

Co-Chair(s): Geoffrey Langedoc, Canadian Aeronautics & Space Institute (CASI), Canada; Jodi Goldberg, United States;

IAC-21.E5.4.1 (confirmed)

VALUE OF SPACE FOR EMERGENCY RESPONSE & DISASTER MANAGEMENT
Robert Wilson, The Aerospace Corporation, United States

IAC-21.E5.4.2 (confirmed)

HUMAN RESILIENCE TO GIANT ASTEROID IMPACT
Clément Weinreich, ENSC / IPB, France

IAC-21.E5.4.3 (confirmed)

THE POTENTIAL ROLE OF SATELLITE IOT IN DISASTER RISK REDUCTION IN INDONESIA
Ajje Nayaka Nikicio, Massachusetts Institute of Technology (MIT), Indonesia

▶ IAC-21.E5.4.4 (video)

FLOOLBOX: SUPPORT PLATFORM FOR THE ELABORATION OF A RISK AND DISASTER MANAGEMENT PLAN FOR LOCAL AND REGIONAL AUTHORITIES
Avid Roman-Gonzalez, Business on Engineering and Technology S.A.C. (BE Tech), Peru

IAC-21.E5.4.6 (confirmed)

IMPROVING RESILIENCE IN LOCAL AND INDIGENOUS COMMUNITIES TO FACE HYDROMETEOROLOGICAL DISASTERS IN CENTRAL AMERICA THROUGH SMALL SATELLITES
Javier Mejuto, National Autonomous University of Honduras (UNAH), Honduras

▶ IAC-21.E5.4.7 (video)

SPACE ASSETS AND TECHNOLOGIES FOR BUSHFIRE MANAGEMENT
Zoë Silverstone, International Space University (ISU)/University of South Australia, Australia

IAC-21.E5.4.8 (confirmed)

IMPLEMENTING ASTRONAUT MITIGATION STRATEGIES TO OVERCOME ISOLATION DURING A QUARANTINE
Guadalupe Espinoza Gastelum, Space Generation Advisory Council (SGAC), United States

IAC-21.E5.4.9 (confirmed)

THE ROLE SPACE ASSETS CAN PLAY IN REMOTE HEALTHCARE DELIVERY DURING PANDEMICS
Veronica Chigoziri Obodozie, International Space University, Nigeria

IAC-21.E5.4.10 (confirmed)

ICUTRAIN: EXPLOITING SPACE AND RAILWAYS ASSETS TO FACE PANDEMICS
Giovanni Cesaretti, Sitael Spa, Italy

E5.5. Sharing space achievements and heritage: space museums and societies

October 29 2021, 13:30 — Al Ain B

Co-Chair(s): Scott Hatton, The British Interplanetary Society, United Kingdom; Jean-Baptiste Desbois, SEMECCEL Cité de l'Es-pace, France; Ines Prieto, SEMECCEL Cité de l'Es-pace, France;
Rapporteur(s): Clementine Decoopman, Space Generation Advisory Council (SGAC), Austria;

IAC-21.E5.5.2 (video)
THE AEROSPACE PERUVIAN MUSEUM PEPM
David Villanueva, Universidad Nacional Mayor de San Marcos, Peru

IAC-21.E5.5.3 (confirmed)
COMPILE 7000 YEARS OF AFRICAN AEROSPACE HISTORY AND BUILD THE AFRICAN SPACE MUSEUM TO CONSERVE THE PAST, IMMERSE IN THE PRESENT AND PREPARE THE SUSTAINABLE FUTURE OF THE AFRICAN SPACE SECTOR IMMERSIVITY - LESSONS LEARNED FROM DUBAI DESERT F
Marco Filipe Romero, Space Generation Advisory Council (SGAC), Angola

IAC-21.E5.5.5 (confirmed)
SIGNIFICANT INFLUENCE OF SPACE EXPLORATION ON ART DESIGN AND FASHION STYLING IN SIX DECADES SINCE 1960: A REVIEW
Eva Yi-Wei Chang, University of Science & Technology, Taipei

E5.IP. Interactive Presentations - 32nd IAA SYMPOSIUM ON SPACE AND SOCIETY

October 28 2021, 13:15 — IP Area

Co-Chair(s): Geoffrey Languedoc, Canadian Aeronautics & Space Institute (CASI), Canada; Olga Bannova, University of Houston, United States;

IAC-21.E5.IP.5 (confirmed)
MEDICINE AND ARCHITECTURE IN SPACE HABITATION (M.A.S.H)
Tom Lobb, Aerospacemedic, United Kingdom

IAC-21.E5.IP.6 (confirmed)
THE GOLDEN HUMAN RECORD MKII
Suzan Majeed, International Space University (ISU), Australia

IAC-21.E5.IP.7 (confirmed)
THE CONCEPT OF ORTHOGONAL RING STRUCTURES IN THE ARCHITECTURE OF PROSPECTIVE MANNED SPACE STATIONS
Georgy Shcheglov, Bauman Moscow State Technical University, Russian Federation

IAC-21.E5.IP.11 (confirmed)
EARTH EXPLORATION FROM DATA SPACE : THE FIVE DIMENSIONS INCOMING
Jamel Metmati, THALES Services, France

IAC-21.E5.IP.12 (confirmed)
FROM A LITTLE DREAMER GIRL TO THE VAST COSMOS AND HUMANITY
Daniela Fernanda González Chávez, Universidad Nacional Autónoma de México (UNAM), Mexico

E6. IAF BUSINESS INNOVATION SYMPOSIUM

Coordinator(s): Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States; Maria-Gabriella SARAH, European Space Agency (ESA), France;

E6.1. Entrepreneurship and Innovation: The Practitioners' Perspectives

October 29 2021, 13:30 — Dubai C

Co-Chair(s): Juergen Drescher, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

IAC-21.E6.1.1 (confirmed)
THE S-CURVE CHALLENGE: HOW TO CLOSE THE BUSINESS CASE FOR SPACE
Anita Bernie, KISPE Space Systems Limited, United Kingdom

IAC-21.E6.1.3 (confirmed)
FLOCKING TO ORBIT: SWARM ROBOTICS IN SPACE
Dillon MacInnis, Space Policy Institute, George Washington University, United States

IAC-21.E6.1.5 (confirmed)
HOW ATTRACTIVE IS THE UAE SPACE SECTOR TO FOREIGN ENTREPRENEURS?
Malak Trabelsi Loeb, United Arab Emirates

IAC-21.E6.1.6 (confirmed)
STRATEGIC DESIGN FOR SPACE BUSINESS: A DIFFERENT APPROACH
Kaori Becerril, Dereum Labs S.A. de C.V., Mexico

IAC-21.E6.1.7 (confirmed)
A BUSINESS STRATEGY TO EMPOWER THE AFRICA SPACE SECTOR BY LEVERAGING EGYPT'S CAPABILITIES
Ahmed Baraka, Space Generation Advisory Council (SGAC), Egypt

IAC-21.E6.1.11 (confirmed)
ASSISTING EUROPEAN SPACE-TECH STARTUPS IN SCALING UP – SPACEUP PROJECT
Barbara Cembella, WFB - Wirtschaftsförderung Bremen, Germany

IAC-21.E6.1.12 (confirmed)
SUPPORT TO START UPS IN TIMES OF COVID - HOW ESA AND ESA BICS CAN SUPPORT THEIR INCUBATEES IN THE NEW NORMAL
Maud Moullec, HE Space, The Netherlands

IAC-21.E6.1.13 (confirmed)
PROMOTING SPACE ENTREPRENEURSHIP AND INNOVATION AT PUBLIC RESEARCH ORGANIZATION: THE CASE OF KOREA AEROSPACE RESEARCH INSTITUTE
GiWon Nam, Korea Aerospace Research Institute (KARI), Korea, Republic of

E6.2. Finance and Investment: The Practitioners' Perspectives

October 27 2021, 09:45 — Dubai C

Co-Chair(s): Joerg Kreisel, JOERG KREISEL International Consultant (JKIC), Germany;

IAC-21.E6.2.1 (confirmed)
START-UP SPACE: GLOBAL INVESTMENT TRENDS
Carissa Christensen, Bryce Space and Technology, United States

IAC-21.E6.2.2 (confirmed)
SIGNIFICANT CONTRIBUTION OF PRIVATE INVESTMENT IN THE HYBRID NATURE OF BOOMING GLOBAL SPACE ECONOMY (2011 - 2021 Q1)
Swarnajyoti Mukherjee, GP Advanced Projects, Srl, Italy

IAC-21.E6.2.4 (confirmed)

INITIATIVES OF PIEMONTE REGION IN ITALY TO SUPPORT SMES BUSINESS AND INNOVATION IN THE INTERNATIONAL SPACE MARKET - UPDATING

Erika Manis, Italy

IAC-21.E6.2.5 (confirmed)

SPACS IN SPACE: HOW BLANK CHECK COMPANIES CAN PROPEL THE SPACE INDUSTRY

Simon Shuham, Space Generation Advisory Council (SGAC), United States

IAC-21.E6.2.6 (confirmed)

FINANCIAL TRANSACTIONS IN SPACE INDUSTRY: THE BLOCKCHAIN PERSPECTIVE

Stefan Aleksa Djurdjevic, Serbia

IAC-21.E6.2.7 (confirmed)

EMERGENCE OF FINANCIAL SCHEMES AT THE HAND OF SPACE COMPANIES

Susana Fornies Rodriguez, France

IAC-21.E6.2.8 (confirmed)

THE FINAL FRONTIER OF THE STOCK MARKET: ANALYZING RISK, RETURN AND OTHER CHARACTERISTICS OF THE INCREASING NUMBER OF LISTED SPACE COMPANIES

Raphael Roettgen, International Space University (ISU), Switzerland

IAC-21.E6.2.9 (confirmed)

DEBT AND BLENDED FINANCE ARE THE BRIDGE TO REALIZING THE IMMENSE VALUE OF SPACE

Kevin Barry, LightBridge Strategic Consulting, United States

E6.3. Innovation: The Academics' Perspectives

October 28 2021, 14:45 — Abu Dhabi B

Co-Chair(s): Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States;

IAC-21.E6.3.2 (confirmed)

THE EFFECTS OF INSTITUTIONAL LOGICS ON ENTREPRENEURSHIP IN THE SPACE SECTOR. THE CASE OF GREECE

Christina Giannopapa, Ministry of Digital Governance of Greece, Greece

IAC-21.E6.3.4 (confirmed)

INNOVATION-DRIVEN LEADERSHIP APPROACH IN THE AEROSPACE INDUSTRY AND THE ROLE OF CULTURAL INTELLIGENCE & MULTICULTURALISM

Alev Sönmez, Blekinge Institute of Technology, Germany

IAC-21.E6.3.6 (confirmed)

FAILURE IS NOT AN OPTION, BUT IT SHOULD BE (PART 2): EVALUATING THE POSITIVE IMPACTS OF COMPANY FAILURES IN SPACE INNOVATION ECOSYSTEMS

Kristi Bradford, Space Policy Institute, George Washington University, United States

IAC-21.E6.3.7 (confirmed)

INTERSECTIONAL ANTIRACISM & TECHNOLOGY DESIGN: BUILDING FRAMEWORKS TO ADVANCE JUSTICE AND EQUITY IN COMPLEX SOCIOTECHNICAL SYSTEMS

Katlyn Turner, Massachusetts Institute of Technology (MIT), United States

IAC-21.E6.3.8 (confirmed)

APPROACHING A NEW ERA IN ORBITAL DEBRIS MITIGATION: A HOLISTIC OVERVIEW OF ECONOMIC AND ENVIRONMENTAL FACTORS

Jose Pedro Ferreira, Polytechnic Institute of Setubal, Portugal

IAC-21.E6.3.9 (confirmed)

OPERATIONALIZING COMMERCIAL SPACE MARKET PROPOSITIONS

Ken Davidian, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States

E6.4. Strategic Risk Management for Successful Space & Defence Programmes

October 26 2021, 09:45 — Dubai C

Co-Chair(s): Maria-Gabriella Sarah, European Space Agency (ESA), France;

IAC-21.E6.4.1 (confirmed)

SPACE-RELATED SOLUTIONS TO FACE INTERNATIONAL SECURITY RISKS

Pascal Legai, European Space Agency (ESA), Italy

IAC-21.E6.4.7 (confirmed)

DEVELOPMENT OF LONG-TERM SPACE PROGRAMMES: HOW TO KEEP CRITICAL KNOW-HOW AND SKILLS ALIVE?

Marc Vales, Dassault Aviation, France

IAC-21.E6.4.10 (video)

SPACE-OCEAN ATLANTIC INTERACTIONS FOR SPACE & DEFENCE ACTIVITIES

I. Pessôa-Lopes, International Space Consultant, Portugal

IAC-21.E6.4.12 (confirmed)

RISK MANAGEMENT FOR SPACE OPTO-MECHANICAL INSTRUMENTS FROM PROPOSAL TO END OF LIFE.

Andrew Court, TNO, The Netherlands

E6.5-GTS.1. Entrepreneurship Around the World

October 27 2021, 14:45 — Dubai D

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-21.E6.5-GTS.1.2 (confirmed)

RESOURCE SUPPORT OF INNOVATIVE SMALL AND MEDIUM-SIZED ENTERPRISES FOR SPACE INDUSTRY DEVELOPMENT IN RUSSIA

Lali Chebukhanova, Peoples' Friendship University of Russia (RUDN University), Russian Federation

IAC-21.E6.5-GTS.1.5 (confirmed)

GLOBAL EXPANSION OF ASTRAX UNIVERSAL BUSINESS COMMUNITY

Taichi Yamazaki, ASTRAX, Inc., Japan

IAC-21.E6.5-GTS.1.6 (confirmed)

A SWEDISH PERSPECTIVE ON STRENGTHENING THE SPACE ECOSYSTEM

Johanna Bergstrom Roos, Luleå University of Technology, Sweden

IAC-21.E6.5-GTS.1.9 (confirmed)

ACCELERATION OF SPACE STARTUPS: LESSONS LEARNED

Krzysztof Kanawka, Blue Dot Solutions, Poland

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;

E7.1. IISL Young Scholars session and Dr. Jasentuliyana Keynote lecture by a leading space law expert

October 26 2021, 09:45 — Abu Dhabi B

Co-Chair(s): Setsuko Aoki, Keio University, Japan; Mohamed Amara, UAE Space Agency, United Arab Emirates;

Rapporteur(s): Jenni Tapio, Ministry of Economic Affairs and Employment of Finland, Finland; Dimitra Stefoudi, Leiden University, The Netherlands;

IAC-21.E7.1.1 (confirmed)

TRANSFER OF OWNERSHIP IN-ORBIT: SHAKING THE STATUS QUO AND RECALIBRATING THE REGISTRATION & LIABILITY REGIMES
Theodora Liameti, National and Kapodistrian University Of Athens, Greece

IAC-21.E7.1.4 (confirmed)

SPACE DEBRIS, THE DARK SIDE OF THE FORCE OF KINETIC ASAT TECHNOLOGY
Almudena Azcárate Ortega, Georgetown University Law Center, United States

IAC-21.E7.1.8 (confirmed)

EFFECTIVE AND ADAPTIVE GOVERNANCE FOR A LUNAR ECOSYSTEM - RECOMMENDATIONS FROM THE YOUNG GENERATIONS
Antonino Salmeri, Space Generation Advisory Council (SGAC), Italy

E7.2. International cooperation on the way to the Moon and Mars

October 26 2021, 14:45 — Abu Dhabi B

Co-Chair(s): Steven Freeland, Western Sydney University, Australia; Mahulena Hofmann, University of Luxembourg, Luxembourg;

Rapporteur(s): Sandra Cabrera Alvarado, University of Luxembourg, Luxembourg; Federico Bergamasco, University of Luxembourg, Luxembourg;

IAC-21.E7.2.1 (confirmed)

MODELS OF REGULATORY COOPERATION FOR MOON AND MARS EXPLORATION
Larry Martinez, International Institute of Space Law (IISL), United States

IAC-21.E7.2.3 (confirmed)

STANDARDIZATION AS AN INSTRUMENT OF COOPERATION: A SILVER LINING FOR HARVESTING COMMON BENEFITS ON THE WAY BACK TO THE MOON?
Jenni Tapio, Ministry of Economic Affairs and Employment of Finland, Finland

▶ IAC-21.E7.2.6 (video)

PERPETUAL PURPOSE TRUST: A STEP FORWARD TO THE CREATION OF NEW PROPERTY RIGHTS FOR LUNAR RESOURCES
Héloïse Vertadier, Open Lunar Foundation, New Zealand

IAC-21.E7.2.7 (confirmed)

NATIONALITY OF THE SPACE OBJECT AS AN INDISPENSABLE DEVICE FOR THE EXPLOITATION OF THE MOON AND MARS
Setsuko Aoki, Keio University, Japan

IAC-21.E7.2.9 (confirmed)

THE REGISTRATION OF LUNAR ACTIVITIES: RECOMMENDATIONS FROM THE REGISTRATION PROJECT
Mark Sundahl, Cleveland State University, United States

IAC-21.E7.2.10 (confirmed)

FORGET SPACE RESOURCES. THE MOON AGREEMENT IS ABOUT PEACE AND THE ENVIRONMENT.
Dimitra Stefoudi, Leiden University, The Netherlands

IAC-21.E7.2.12

GOVERNANCE OF SPACE RESOURCES: EFFORTS TO ACHIEVE AN INTERNATIONAL REGIME FOR SUSTAINABLE SPACE RESOURCE ACTIVITIES
Suyan Cristina Malhadas, Catholic University of Santos, Brazil

IAC-21.E7.2.15 (confirmed)

THE ARTEMIS ACCORDS AS A TOOL OF INTERNATIONAL COOPERATION
Frans von der Dunk, University of Nebraska-Lincoln, The Netherlands

IAC-21.E7.2.17 (confirmed)

SAFETY ZONES ON THE MOON: INTERNATIONAL AND NATIONAL LEGAL DIMENSION
Irina Chernykh, Peoples' Friendship University of Russia (RUDN University), Russian Federation

E7.3. A new look at (how far are we with) Space Traffic Management

October 27 2021, 09:45 — Abu Dhabi B

Co-Chair(s): Diane Howard, International Institute of Space Law (IISL), United States; Martha Mejia-Kaiser, International Institute of Space Law (IISL), Germany;

Rapporteur(s): Gina Petrovici, ECSC, Germany; Sumaya Al Hajeri, United Arab Emirates Space Agency, United Arab Emirates;

IAC-21.E7.3.3 (confirmed)

AGREEING ON THE RULES-OF-THE-ROAD - DISTILLING BUILDING BLOCKS FROM PROPOSED SPACE TRAFFIC MANAGEMENT GUIDELINES AND STANDARDS
Hjalte Osborn Frandsen, Danish Astronautical Society, Denmark

IAC-21.E7.3.4 (confirmed)

REGULATORY APPROACHES FOR A SUSTAINABLE GLOBAL ON-ORBIT SERVICING MARKET
Chris Blackerby, Astroscale Ltd, Japan

IAC-21.E7.3.5 (confirmed)

TOWARDS THE DEVELOPMENT OF AN STM REGIME: OPPORTUNITIES AND BARRIERS FOR EUROPE
Christina Giannopapa, Ministry of Digital Governance of Greece, Greece

▶ IAC-21.E7.3.9 (video)

RECONCILING SSA DATA SHARING LEGAL PRACTICES THROUGH A COMPARATIVE APPROACH
Giulia Pavesi, KU Leuven – University of Leuven, Italy

IAC-21.E7.3.10 (confirmed)

MAPPING STM PRACTICE AND POLICY
Diane Howard, International Institute of Space Law (IISL), United States

E7.4. The relations between Trade Law, Finance and Space Law

October 27 2021, 14:45 — Abu Dhabi B

Co-Chair(s): Ingo Baumann, BHO Legal, Germany; Lesley Jane Smith, , Germany;

Rapporteur(s): Emilie Marley Siemssen, GomSpace Aps, Denmark; Kamlesh Brocard, Swiss Space Office (SSO), Switzerland;

IAC-21.E7.4.1 (confirmed)

UAE LAWS AND REGULATIONS SUPPORTING THE INVESTOR ENVIRONMENT IN THE UAE SPACE SECTOR
Fathey Al Shareji, UAE Space Agency, United Arab Emirates

IAC-21.E7.4.2 (confirmed)

REGULATORY SUPPORT OF SPACE GOODS AND SERVICES TRADE GROWTH IN EURASIAN ECONOMIC UNION
Darya Bohdan, Belarusian State University, Belarus

IAC-21.E7.4.4 (confirmed)

SUSTAINABLE CORPORATE FINANCE AND SPACE ACTIVITIES – HOW TO RESHAPE THE GLOBAL SPACE INDUSTRY THROUGH FINANCING
Lucien RAPP, University of Toulouse I (UT1), France

IAC-21.E7.4.5 (confirmed)

SECURITY INTERESTS IN EXTRA-TERRESTRIAL INFRASTRUCTURE
Hamza Hameed, Unidroit, Italy

E7.5. National space law and security – an update

October 29 2021, 09:45 — Abu Dhabi B

Co-Chair(s): Dennis Burnett, National Security and Export Compliance Consulting, United States; Mahulena Hofmann, University of Luxembourg, Luxembourg;

Rapporteur(s): Zeina Ahmad, University of Cologne, Germany; Rada Popova, Isar Aerospace, Germany;

IAC-21.E7.5.2 (confirmed)

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MARIANNA ILYASHEVICH, Peoples' Friendship University of Russia (RUDN University), Russian Federation

▶ IAC-21.E7.5.3 (video)

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Feng-Tai Hwang, National Space Organization, Taipei

▶ IAC-21.E7.5.6 (video)

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YONGLIANG YAN, Beijing Jiaotong University, China

IAC-21.E7.5.7 (confirmed)

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Ishita Das, NALSAR University of Law, India

IAC-21.E7.5.10 (confirmed)

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Ian Grosner, Government of Brazil, Brazil

IAC-21.E7.5.11 (confirmed)

THE LEGITIMACY OF THE U.S. SPACE FORCE UNDER THE OUTER SPACE TREATY.
Lizeth Sanchez Aguirre, United States

▶ IAC-21.E7.5.12 (video)

AN ANALYSIS ON THE CHARACTERISTICS OF THE NATIONAL SPACE LAW-MAKING IN THE ASIA-PACIFIC COUNTRIES: A CASE STUDY BASED ON THE FINDINGS OF THE APRSAF NATIONAL SPACE LEGISLATION INITIATIVE
Ikuko Kuriyama, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-21.E7.5.13 (confirmed)

LUXEMBOURG COMPLETING ITS SPACE LEGISLATION
Mahulena Hofmann, University of Luxembourg, Luxembourg

E7.6-E3.5. 35th IAA/IISL Scientific Legal Roundtable: Conversations about Commercialization

October 28 2021, 09:45 — Abu Dhabi B

Co-Chair(s): Dr. Marco Ferrazzani, European Space Agency (ESA), France; Dr. Peter Martinez, Secure World Foundation, United States; Mr. Alex da Silva Curriel, Surrey Satellite Technology Ltd (SSTL), United Kingdom;

Rapporteur(s): Mr. Marc Haese, DLR, German Aerospace Center, Germany; Dr. Nicola Rohner-Willsch, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany;

E7.7. NewSpace and Space Law

October 29 2021, 13:30 — Abu Dhabi B

Co-Chair(s): Catherine Doldirina, International Institute of Space Law (IISL), Italy; PJ Blount, University of Luxembourg, Luxembourg;

Rapporteur(s): Ruairidh Leishman, [unlisted], United Kingdom; Alessandra Vernile, EURISY, France;

IAC-21.E7.7.5 (confirmed)

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Scott Schneider, Australia

IAC-21.E7.7.7 (confirmed)

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Sara Dalledonne, Institute of Air and Space Law, McGill University, Italy

IAC-21.E7.7.8 (confirmed)

AN INTERNATIONAL/CONTRACTUAL MODEL FOR FUTURE SPACE ACTIVITIES - A NEW STATUS FOR PRIVATE COMPANIES?
Ivan Fino, Italy

IAC-21.E7.7.9 (confirmed)

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ANKIT KUMAR PADHY, Vellore Institute of Technology, India

▶ IAC-21.E7.7.10 (video)

BLAMING GALILEO: LIABILITY FOR DAMAGES CAUSED BY GNSS ENABLED AUTONOMOUS SYSTEMS
Ioana Bratu, Vrije Universiteit Amsterdam, The Netherlands

▶ IAC-21.E7.7.11 (video)

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Anne-Sophie Martin, Sapienza University of Rome, Italy

E7.IP. Interactive Presentations - IISL COLLOQUIUM ON THE LAW OF OUTER SPACE

October 28 2021, 13:15 — IP Area

Co-Chair(s): OLAVO DE OLIVEIRA BITTENCOURT NETO, Catholic University of Santos, Brazil; Christopher Johnson, Secure World Foundation, United States;

IAC-21.E7.IP.2 (confirmed)

HALF A CENTURY IN SPACE: CONTRIBUTING TO THE DEVELOPMENT OF SPACE AND TELECOMMUNICATIONS LAW
Elena Morozova, Intersputnik International Organization of Space Communications, Russian Federation

▶ IAC-21.E7.IP.5 (video)

LUNAR MISSIONS TREATY REGULATION: PROPOSING A REVISED OR AN ALTERNATIVE MOON AGREEMENT
Jiaying Yu, The University of Hong Kong, Hong Kong

E8. IAA MULTILINGUAL ASTRONAUTICAL TERMINOLOGY SYMPOSIUM

Coordinator(s): Susan McKenna-Lawlor, Space Technology (Ireland) Ltd., Ireland; Tetsuo Yoshimitsu, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

E8.1. Multilingual Astronautical Terminology

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Co-Chair(s): Susan McKenna-Lawlor, Space Technology (Ireland) Ltd., Ireland; Tetsuo Yoshimitsu, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan;

Rapporteur(s): Fabrice Dennemont, International Academy of Astronautics (IAA), France;

IAC-21.E8.1.1 (confirmed)
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Adam Dąbrowski, Gdansk University of Technology, Poland

IAC-21.E8.1.3 (confirmed)
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Miriam Hamidi, European Space Agency (ESA), France

E9. IAF SYMPOSIUM ON SPACE SECURITY

Coordinator(s): Serge Plattard, University College London (UCL), United Kingdom; Stefano Zatti, University of Rome “La Sapienza”, Italy;

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October 29 2021, 09:45 — Sheikh Rachid C

Co-Chair(s): David Spencer, The Aerospace Corporation, United States; Serge Plattard, University College London (UCL), United Kingdom; Tanja Masson-Zwaan, International Institute of Air and Space Law, Leiden University, The Netherlands;

Rapporteur(s): Samantha Le May, RMIT University (Royal Melbourne Institute of Technology), Australia;

IAC-21.E9.1-A6.8.2 (confirmed)
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Clelia Iacomino, SEE Lab - SDA Bocconi School of Management, Italy

IAC-21.E9.1-A6.8.7 (confirmed)
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Hamza Hameed, Unidroit, Italy

IAC-21.E9.1-A6.8.8 (confirmed)
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Madison Walker, Astroscale Pte. LTD, United States

IAC-21.E9.1-A6.8.12 (confirmed)
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Christina Giannopapa, Ministry of Digital Governance of Greece, Greece

E9.2. Cyber-based security threats to space missions: establishing the legal, institutional and collaborative framework to counteract them

October 28 2021, 14:45 — Al Ain B

Co-Chair(s): Julien Airaud, Centre National d’Etudes Spatiales (CNES), France; Stefano Zatti, University of Rome “La Sapienza”, Italy;

IAC-21.E9.2.5 (confirmed)
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Deborah Housen-Couriel, Israel

IAC-21.E9.2.6 (confirmed)
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George Anthony Long, United States

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Coordinator(s): Serge Plattard, University College London (UCL), United Kingdom;

IAC-21.E9.IP.2 (confirmed)
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Anne Jing, University of Toronto Aerospace Team (UTAT), Canada

IAC-21.E9.IP.3 (confirmed)
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Josef Koller, The Aerospace Corporation, United States

GTS. GLOBAL TECHNICAL SYMPOSIUM

Coordinator(s): Stephanie Wan, Space Generation Advisory Council (SGAC), United States; Seyed Ali Nasser, Space Generation Advisory Council (SGAC), Canada;

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October 28 2021, 14:45 — Dubai D

Co-Chair(s): Matthias Hetscher, DLR (German Aerospace Center), Germany; Norbert M.K. Lemke, OHB System AG - Munich, Germany;

Rapporteur(s): Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), United Kingdom;

IAC-21.GTS.5-B4.9.4 (confirmed)
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Paul Kiesling, BLUECUBE Aerospace, United States

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Altartaz, Orit	CA	IAC-21.B4.4.6
Althaf, A	CA	IAC-21.B2.6.9
Altingun, Ali Murteza	CA	IAC-21.B4.2.2
Altoasar, Mare	CA	IAC-21.C3.4.7
Altun, Altan Alpay	CA	IAC-21.C2.5.10
ALTunajji, Eman	CA	IAC-21.A3.3B.1
ALTunajji, Eman	CA	IAC-21.A3.IP.63
ALTunajji, Eman	CA	IAC-21.E1.IP.10
Alur, Aishwarya	A	IAC-21.C4.3.2
Alvarenga dos Santos, Marcia	CA	IAC-21.E7.5.10
Alves, João	CA	IAC-21.E3.4.2
Alves, Pedro	CA	IAC-21.C2.5.11
Alves de Oliveira, Luis Fellipe	CA	IAC-21.E1.2.10
Alvi, Arjumand	A	IAC-21.D3.1.9
Alyamovskiy, Sergey	CA	IAC-21.B3.4-B6.4.11
Alzaabi, Ali	A	IAC-21.C2.6.9
Alzaabi, Mohammed	CA	IAC-21.A3.2A.14
Alzaabi, Mohammed	CA	IAC-21.D1.3.3
Alzubairi, Ahmed	CA	IAC-21.B1.3.14
Alzubairi, Ahmed	A	IAC-21.D1.6.9
Alzurikat, Merna	CA	IAC-21.D4.2.7
Amadio, Diego	CA	IAC-21.B4.1.9
Amadio, Diego	CA	IAC-21.B4.3.11
Amadio, Diego	CA	IAC-21.B4.9-GTS.5.5
Amadio, Diego	CA	IAC-21.A6.10-B6.5.9
Amador, Emily	CA	IAC-21.D3.1.3
Amaro, Goncalo	CA	IAC-21.C1.1.12
Amaro, Leonardo	CA	IAC-21.A3.2B.17
Ambrosi, Lorenzo	CA	IAC-21.A3.4B.4
Ambrosio, Ana Maria	CA	IAC-21.B6.1.10
Amelung, Till	CA	IAC-21.A1.1.5
Amin, Amel	CA	IAC-21.E1.IP.10
Amiri, Ebrahim	CA	IAC-21.A6.IP.20
Amiri, Sarah	CA	IAC-21.A3.3A.1
Amirkhani, Alireza	CA	IAC-21.A6.IP.20
Ammannito, Eleonora	CA	IAC-21.A3.1.2
Ammannito, Eleonora	CA	IAC-21.D3.1.11
Amoruso, Leonardo	A	IAC-21.D1.1.8
Amoruso, Leonardo	A	IAC-21.B1.4.7
Amoruso, Leonardo	CA	IAC-21.B6.IP.7
Amoruso, Leonardo	A	IAC-21.B6.2.11
Amrousse, Rachid	A	IAC-21.C4.8-B4.5A.5
An, Hyoung Joon	A	IAC-21.E4.2.6
Anagnostopoulou, Dimitra	CA	IAC-21.E7.1.1
Anandkalwas, Mahesh	A	IAC-21.E2.4.14
Anbarjafari, Gholamreza	CA	IAC-21.C1.8.8
Anderl, Reiner	CA	IAC-21.D1.1.2
Anderson, Allison	CA	IAC-21.A1.2.6
Anderson, Joseph	CA	IAC-21.E7.3.4
Anderson, Vicky	CA	IAC-21.D1.4B.1
Andreas, Dömel	CA	IAC-21.A3.2A.3
Andreas, Dömel	CA	IAC-21.A5.3-B3.6.5
Andreev, Evgeniy	CA	IAC-21.B3.5.2
Andreis, Eleonora	A	IAC-21.C1.1.13
Andreis, Eleonora	CA	IAC-21.D4.1.1
Andres, Chimira	A	IAC-21.E1.5.6
Andreussi, Tommaso	A	IAC-21.C4.5.7
Andreussi, Tommaso	A	IAC-21.C4.5.12

Name	Role	Paper
Andrews, Daniel	A	IAC-21.A3.2A.4
Andrews, Shaun	CA	IAC-21.C4.6.3
Andrzejewski, Jacek	CA	IAC-21.B6.1.5
Andrés, Anastasia	CA	IAC-21.E5.2.6
Angeletti, Federica	CA	IAC-21.C2.2.4
Angeletti, Federica	A	IAC-21.C2.3.4
Angeletti, Federica	A	IAC-21.C2.9.2
Angeria, Benyam	CA	IAC-21.C4.3.9
Angert, Matthew	CA	IAC-21.B2.3.3
Ansalone, Luigi	CA	IAC-21.A6.9.6
Ansalone, Luigi	CA	IAC-21.B4.4.3
Ansalone, Luigi	CA	IAC-21.A6.IP.21
Anselmo, Luciano	CA	IAC-21.A6.4.8
Anthoine, Jerome	CA	IAC-21.D2.3.12
Anthony, Erin	CA	IAC-21.B3.3.8
Antleji, Kaja	CA	IAC-21.E5.4.7
Anton, Sabin-Viorel	CA	IAC-21.D2.3.4
Antone, Brennan	A	IAC-21.A1.1.4
Antonello, Riccardo	CA	IAC-21.C1.1.6
Antonello, Riccardo	CA	IAC-21.B4.6A.11
Antonetti, Stefano	CA	IAC-21.D1.1.8
Antoniadou, Eleni	A	IAC-21.E3.1.1
Antoniadou, Eleni	A	IAC-21.A6.8-E9.1.4
Antoniazzi, Luigi	CA	IAC-21.E2.3-GTS.4.7
Antonietti, Nicolò	CA	IAC-21.A4.1.15
Antonietti, Nicolò	A	IAC-21.A4.2.12
Antonova, Elena	CA	IAC-21.A1.4.4
Anwar, Adeel	CA	IAC-21.B2.1.7
Aoki, Setsuko	A	IAC-21.E7.2.7
Aoki, Yuichiro	CA	IAC-21.C2.1.6
AOUF, NABIL	CA	IAC-21.A3.2B.9
Aoun, Waël	CA	IAC-21.A5.2.7
Aparicio Appendini, Juan Pablo	CA	IAC-21.C1.3.8
Apel, Uwe	CA	IAC-21.C4.1.11
Apel, Uwe	CA	IAC-21.D2.3.12
Apodaca Moreno, Maria Regina	CA	IAC-21.A2.3.1
Apollonio, Emily	CA	IAC-21.A3.2B.17
Aprea, Julio	CA	IAC-21.D2.1.4
Arabtelgerd, Zahra	CA	IAC-21.A6.IP.20
Arango, Cristian Esteban	CA	IAC-21.B4.IP.15
Araniti, Giuseppe	CA	IAC-21.B2.1.2
Araniti, Giuseppe	CA	IAC-21.E1.IP.3
Arañó Romero, Juan Carlos	CA	IAC-21.A3.2B.12
Arcia Gil, Angel	CA	IAC-21.B4.2.5
Arcia Gil, Angel	CA	IAC-21.E2.4.9
Arcia Gil, Angel	A	IAC-21.E1.5.13
Arcia Gil, Angel	A	IAC-21.B2.6.6
Arcli, Viviana	CA	IAC-21.B4.4.3
Ardes, Runggu Prilia	CA	IAC-21.E3.3.2
Ardila, David	CA	IAC-21.B4.IP.15
Ardon-Dryer, Karin	CA	IAC-21.E1.2.3
Aredea, Eyoas Ergetu	CA	IAC-21.B4.IP.21
Arguello, Henry	CA	IAC-21.B4.IP.15
Arias Bonilla, Fiorella	CA	IAC-21.A2.6.4
Arias Bonilla, Fiorella	A	IAC-21.A1.8.6
Arighi, Paolo	CA	IAC-21.A3.4B.4
Armstead, James	CA	IAC-21.E7.2.1
Arneodo, Francesco	CA	IAC-21.D5.3.4
Arneodo, Francesco	CA	IAC-21.A3.2C.17
Arnould, Jacques	A	IAC-21.E3.2.6
Aronne, Giovanna	CA	IAC-21.E1.2.5
Arora, Diksha	CA	IAC-21.D4.1.8
Arora, Diksha	A	IAC-21.A2.2.14
Arora, Diksha	CA	IAC-21.A3.IP.28
Arora, Diksha	CA	IAC-21.A2.5.7
Arruda, Cheila	A	IAC-21.E4.1.6
Arslan, Fatih	CA	IAC-21.B2.1.9
Artamonov, Anton	CA	IAC-21.B3.9-GTS.2.5
Arungwa, Ikenna	CA	IAC-21.B1.5.9
Aryan, Kaushik	A	IAC-21.C2.9.4
Asencio, Joe	CA	IAC-21.E1.8.5
Ashcroft, Eric	CA	IAC-21.B5.2.5
Ashurst, Travis	CA	IAC-21.A5.1.18
Aslan, Alim Rüstem	CA	IAC-21.B4.2.2
Aslan, Alim Rüstem	CA	IAC-21.C1.9.7

Name	Role	Paper
Asnani, Vivake	CA	IAC-21.A3.3A.5
Asraff, A.K.	CA	IAC-21.C4.1.2
Asraff, A.K.	CA	IAC-21.C4.IP.6
Asraff, Ahmedul	CA	IAC-21.C4.2.7
Asrar, Farhan M.	CA	IAC-21.B5.2.4
Asrar, Farhan M.	CA	IAC-21.E5.4.9
Astapenko, Volodymyr	CA	IAC-21.C3.5-C4.10.4
Atek, Sofiane	A	IAC-21.B5.2.3
Athauda, Dharshana	CA	IAC-21.C4.3.9
Atienza, Kristine Jane	CA	IAC-21.B1.5.10
Attaelmanan, Gaffar	CA	IAC-21.E1.2.9
Atterwall, Per-Erik	CA	IAC-21.B4.IP.16
Auburn, John	CA	IAC-21.A6.6.3
Auburn, John	CA	IAC-21.A6.10-B6.5.1
Augelli, Mauro	A	IAC-21.A2.1.3
Auman, Kerstyn	CA	IAC-21.A6.7.5
Aumann, Anna	CA	IAC-21.B4.4.6
Aumayr, Friedrich	CA	IAC-21.C4.6.13
Aumayr, Friedrich	CA	IAC-21.C4.6.14
Aurigemma, Renato	CA	IAC-21.C2.4.3
Auth, Dominik	CA	IAC-21.A6.7.3
Autino, Adriano V.	A	IAC-21.A3.1.3
Autino, Adriano V.	A	IAC-21.D4.1.15
Autino, Adriano V.	A	IAC-21.E3.2.14
Avila, Marc	CA	IAC-21.A2.5.1
Avinash, Greeshma	CA	IAC-21.C2.9.4
Avramova, Temenuzhka Valentinova	CA	IAC-21.B6.2.4
Awasthi, Lawanya	CA	IAC-21.A3.3A.10
Awasthi, Lawanya	CA	IAC-21.A3.5.1
Axebrink, Emma	CA	IAC-21.B4.2.9
Ayala Fernández, Lucía	CA	IAC-21.D2.3.12
Ayala Fernández, Lucía	CA	IAC-21.D2.4.6
Aydogan, Musa	CA	IAC-21.E2.3-GTS.4.13
Azcárate Ortega, Almudena	A	IAC-21.E7.1.4
Aziz, Sara	CA	IAC-21.A3.IP.37

B		
B Rao, Bhavana	CA	IAC-21.C4.5.3
B. Dietrich, George	CA	IAC-21.A6.9.5
B. Oqab, Haroon	CA	IAC-21.A6.9.5
Baatout, Sarah	CA	IAC-21.A3.IP.32
Baba, Mitsuhisa	CA	IAC-21.A2.4.4
Babbar, Neha Jasbir	CA	IAC-21.E1.9.6
Baber, Sheila	CA	IAC-21.A5.2.8
Bacci, Stefano	CA	IAC-21.A1.8.15
Bach, Christian	CA	IAC-21.C4.1.6
Bach, Christian	CA	IAC-21.C4.2.8
Bach, Christian	CA	IAC-21.D2.5.8
Bach, Christian	CA	IAC-21.D6.2-D2.9.4
Bacsardi, Laszlo	CA	IAC-21.B2.8-GTS.3.2
Badovinac, Miranda	CA	IAC-21.A1.8.9
Badri, Khalid	CA	IAC-21.A3.3B.1
Badri, Khalid	A	IAC-21.A3.IP.63
Badri, Khalid	CA	IAC-21.E1.IP.10
Bads, Radim	A	IAC-21.B6.1.7
Baglioni, Pietro	CA	IAC-21.A3.3A.4
Bahenduzi, Chelsea	A	IAC-21.A1.IP.15
Bai, Xueliang	CA	IAC-21.B4.6B.5
BAILET, Gilles	CA	IAC-21.C2.2.12
BAILET, Gilles	CA	IAC-21.B4.7.4
BAILET, Gilles	CA	IAC-21.B4.6B.3
Bajaj, Dinesh	CA	IAC-21.C4.2.7
Baker, Charles	A	IAC-21.D1.5.2
Baker, Keith	CA	IAC-21.D1.5.4
Baker, Murielle	CA	IAC-21.B4.5.1
Bakhmat, Artsiom	CA	IAC-21.D2.5.10
Balachandran, Ribin	CA	IAC-21.D1.1.2
Balasubramaniam, Aditya	CA	IAC-21.D4.1.14
Balasubramaniam, Aditya	A	IAC-21.A4.2.9
Balasubramaniam, Aditya	CA	IAC-21.C4.5.3
Balbino, Alex	CA	IAC-21.E1.2.11
Baldesi, Gianluigi	A	IAC-21.D5.2.5
Baldesi, Gianluigi	A	IAC-21.E1.6.5
Balestrero Machado, Larissa	A	IAC-21.A3.4B.9

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Name	Role	Paper
Balka, Mateusz	CA	IAC-21.A1.IP.14
Balke, Alexander	CA	IAC-21.B4.6B.6
Balke, Jannis	CA	IAC-21.E6.1.11
Ballande, Arnaud	A	IAC-21.E2.3-GTS.4.6
Ballaux, Richard	CA	IAC-21.B3.5.7
Ballester Ferrer, Marta	CA	IAC-21.A2.3.8
Balossino, Alessandro	CA	IAC-21.B4.7.1
Bals, Johann	CA	IAC-21.A3.2A.3
Bamann, Christoph	CA	IAC-21.A6.6.2
Bammens, Sam	CA	IAC-21.E2.3-GTS.4.13
Bandini, Flavio	A	IAC-21.A5.1.3
Bando, Mai	CA	IAC-21.C1.3.4
Bando, Mai	CA	IAC-21.C1.7.5
Bando, Mai	CA	IAC-21.C1.7.10
BANDUKWALA, IDRIS	CA	IAC-21.E2.3-GTS.4.11
Banerji, Arunimaa	CA	IAC-21.B4.9-GTS.5.6
Bani, Daniele	CA	IAC-21.A1.8.15
Bannach-Brown, Alexandra	CA	IAC-21.A1.3.3
Bannova, Olga	CA	IAC-21.E5.1.4
Bannova, Olga	A	IAC-21.A5.1.15
Bannova, Olga	A	IAC-21.E1.4.6
Bannova, Olga	CA	IAC-21.E4.2.5
Bansal, Srishiti	CA	IAC-21.B3.5.1
Bapat, Tanaya	CA	IAC-21.E2.4.14
Baptista, Victor	CA	IAC-21.E1.2.10
Baptista, Victor	A	IAC-21.E3.6.9
Barabash, Petr	CA	IAC-21.A1.IP.6
Barabash, Victoria	A	IAC-21.E1.5.2
Barabash, Victoria	CA	IAC-21.B4.7.3
Barad, Kuldeep Rambhai	A	IAC-21.D1.6.7
Baraka, Ahmed	CA	IAC-21.A3.IP.37
Baraka, Ahmed	A	IAC-21.E6.1.7
Barantsev, Stanislav	CA	IAC-21.B1.IP.12
Barantsev, Stanislav	CA	IAC-21.B1.5.15
Baranwal, Prerna	A	IAC-21.A7.2.4
Baranwal, Prerna	CA	IAC-21.B1.4.4
Barapatre, Prathmesh	A	IAC-21.A3.IP.41
Barapatre, Prathmesh	A	IAC-21.A3.IP.42
Barapatre, Prathmesh	A	IAC-21.A3.5.8
Barapatre, Prathmesh	CA	IAC-21.C3.4.9
Baraskar, Aditya	CA	IAC-21.E3.3.2
Barato, Francesco	A	IAC-21.C4.9.2
Barbato, Alessandro	CA	IAC-21.C4.5.9
Barbato, Alessandro	CA	IAC-21.B4.6A.10
Barber, Simeon	CA	IAC-21.A3.2A.8
Barberi Spirito, Daniele	A	IAC-21.A3.3A.9
Barbier, Pascal	CA	IAC-21.C4.6.6
Barbier, Pascal	A	IAC-21.D4.5.4
Barbier, Pascal	A	IAC-21.A3.2C.14
Barbier, Thomas	A	IAC-21.A6.5.1
Barbosa, Domingos	A	IAC-21.E1.9.13
Barcelos Júnior, Manuel Nascimento Dias	CA	IAC-21.C2.5.11
Bardi, Antonio	CA	IAC-21.A1.5.3
Bardi de Fourtou, Gautier	CA	IAC-21.A3.2B.17
Barea, Adrian	CA	IAC-21.C1.7.4
Baresi, Nicola	CA	IAC-21.C1.5.2
Barfknecht, Peter	CA	IAC-21.A5.2.5
Bargen, Ingo von	CA	IAC-21.A3.2A.3
Barisano, Giuseppe	A	IAC-21.B3.8.10
Bariselli, Federico	CA	IAC-21.C4.5.12
Barison, Marco	CA	IAC-21.B6.IP.7
Barkarmo, Romil	CA	IAC-21.B4.2.9
Barkarmo, Romil	CA	IAC-21.B4.IP.16
Barman, Saumitra	A	IAC-21.C1.9.9
Barnhard, Gary	A	IAC-21.C3.2.2
Barnhard, Gary	A	IAC-21.D3.2B.6
Barnhart, David	CA	IAC-21.C2.1.12
Barnhart, David	CA	IAC-21.D5.1.8
Barnhart, David	A	IAC-21.B6.IP.5
Barona Mendoza, Jhon Jairo	CA	IAC-21.B4.IP.15
Barraclough, Simon	CA	IAC-21.B4.6B.5
Barredo Juan, Antoni	CA	IAC-21.E2.3-GTS.4.9
Barrera Molano, Sergio Fernando	CA	IAC-21.B4.IP.15
Barrera-Ars, Jordi	CA	IAC-21.B4.4.13

Name	Role	Paper
Barrios, Carlos J.	CA	IAC-21.B4.IP.15
Barrios, Juan Paolo Lorenzo Gerardo	CA	IAC-21.E1.4.8
Barry, Kevin	A	IAC-21.D4.3.1
Barry, Kevin	A	IAC-21.E6.2.9
Barry, Kevin	A	IAC-21.E3.6.2
Barth, Andrew	A	IAC-21.A3.2C.5
Barthelmes, Stefan	CA	IAC-21.A3.4A.8
Barthez, Marie	A	IAC-21.A3.IP.62
BARTOLI, Nathalie	CA	IAC-21.D2.4.6
Bartoloni, Alessandro	A	IAC-21.A1.5.1
Bartscher, Christoph	CA	IAC-21.B1.2.8
BARVE, NINAD	CA	IAC-21.E2.4.13
Basana, Federico	CA	IAC-21.C1.1.6
Basana, Federico	A	IAC-21.A6.5.10
Basile, Aniello	CA	IAC-21.A6.9.8
Basnayake, Isuru	A	IAC-21.D1.6.6
Bastida Virgili, Benjamin	CA	IAC-21.A6.4.1
Basubas, Florence Pauline	CA	IAC-21.E3.1.1
Basubas, Florence Pauline	CA	IAC-21.A6.8-E9.1.4
Batcha, Amelia	CA	IAC-21.E7.1.8
Bathory, Heidi	CA	IAC-21.B2.IP.2
Batmunkh, Purevkhuu	CA	IAC-21.B4.1.6
Bator, Sebastian	CA	IAC-21.C4.3.9
Battagliere, Maria Libera	CA	IAC-21.B1.5.12
Battezzati, Niccolò	CA	IAC-21.B4.8.4
Battler, Melissa	CA	IAC-21.A3.2B.8
Batul, Beenish	CA	IAC-21.B1.4.4
Batuyev, Yuri	CA	IAC-21.B3.4-B6.4.11
Baudeau, Nicolas	CA	IAC-21.D1.2.1
Bauer, Arnold	CA	IAC-21.A3.2A.3
Bauer, Waldemar	CA	IAC-21.D2.6.2
Bauerheim, Michael	CA	IAC-21.C4.1.1
Bautista, Izrael Zenar Casople	CA	IAC-21.C3.3.1
Bavikar, Kunal	CA	IAC-21.A5.1.11
Bavikar, Kunal	CA	IAC-21.B2.6.12
Bayarkhuu, Battuvshin	CA	IAC-21.B4.1.6
Bazzano, Angela	A	IAC-21.A7.2.3
Beauvois, Erwan	CA	IAC-21.E7.1.8
Becerril, Kaori	CA	IAC-21.D4.2.5
Becerril, Kaori	A	IAC-21.E6.1.6
Becerril González, Cinthya	CA	IAC-21.A2.2.8
Becerril González, Cinthya	CA	IAC-21.E1.9.11
Bechini, Michele	A	IAC-21.A5.1.13
Bechini, Michele	CA	IAC-21.B4.7.13
Bechini, Nicola	CA	IAC-21.A5.1.13
Beckett, Laura	CA	IAC-21.B1.IP.12
Beczowski, Szymon	CA	IAC-21.B4.IP.24
Bedetti, Emanuele	CA	IAC-21.B4.3.11
Bedetti, Emanuele	CA	IAC-21.A6.10-B6.5.9
Bedetti, Emanuele	CA	IAC-21.B2.7.8
Bedialauneta, Pablo	CA	IAC-21.A5.1.10
Bedialauneta, Pablo	CA	IAC-21.D3.1.4
Bedialauneta, Pablo	CA	IAC-21.D1.6.5
Bedington, Robert	CA	IAC-21.B4.6B.5
Beegadhur, Shayne	CA	IAC-21.D1.IP.3
Beeley, James	CA	IAC-21.B4.7.4
Beerden, Yarne	CA	IAC-21.E2.3-GTS.4.13
Beglov, Rushan	CA	IAC-21.B3.3.5
Behnisch, Madlen	A	IAC-21.B6.2.10
Behnke, Alexander	CA	IAC-21.C2.4.8
BEJAR ROMERO, Juan Antonio	CA	IAC-21.D3.2B.10
BEKHTI, Mohammed	CA	IAC-21.C3.3.5
BEKHTI, Mohammed	CA	IAC-21.C3.IP.3
Bekkeng, Tore Andre	CA	IAC-21.A3.2C.17
Belakovskiy, Mark	CA	IAC-21.A1.IP.1
Belcher, Dave	CA	IAC-21.A6.8-E9.1.10
Belhadfa, Emma	CA	IAC-21.A2.7.3
Bell, James	CA	IAC-21.E1.IP.9
Bell, Samantha	CA	IAC-21.A3.IP.43
Bell, Suzanne	CA	IAC-21.A1.1.4
Bellego, Mickael	CA	IAC-21.D1.2.1
Bellicoso, Davide	CA	IAC-21.E1.5.11
Bellio, Eleonora	CA	IAC-21.C1.9.6
Bellome, Andrea	A	IAC-21.C1.5.7
Bellomo, Nicolas	CA	IAC-21.C4.5.9

Name	Role	Paper
Bellomo, Nicolas	CA	IAC-21.B4.6A.10
Bellwald, Theodore	CA	IAC-21.A3.2C.12
Belokonov, Igor V.	A	IAC-21.B4.3.8
Belokonov, Igor V.	A	IAC-21.A6.5.6
Belyaev, Andrey	CA	IAC-21.E2.2.6
Belyaev, Andrey	CA	IAC-21.C1.5.4
Belyaev, Michail Yu.	CA	IAC-21.B3.3.7
Belyaev, Michail Yu.	A	IAC-21.B3.4-B6.4.11
Benayas Penas, Miguel	CA	IAC-21.C1.4.5
Bender, Florian	A	IAC-21.B3.4-B6.4.9
Benecki, Pawel	CA	IAC-21.B6.1.5
Benedikter, Boris	A	IAC-21.D2.3.8
Benetton, Alessandro	CA	IAC-21.B5.1.5
Benetton, Alessandro	CA	IAC-21.D1.1.3
Benetton, Alessandro	A	IAC-21.B6.2.4
Benigno, Nicolò Roberto	CA	IAC-21.B4.8.4
Benvenuto, Eugenio	CA	IAC-21.A3.IP.38
Benvenuto, Eugenio	CA	IAC-21.B4.9-GTS.5.5
Beregovskiy, Vladislav	CA	IAC-21.B2.3.11
Berenguer, Chloe	CA	IAC-21.C4.5.12
Berg, Marco	CA	IAC-21.A3.2A.16
Bergamasco, Federico	CA	IAC-21.D3.2B.7
Bergami, Alessio	CA	IAC-21.A3.IP.38
Bergami, Alessio	CA	IAC-21.B4.9-GTS.5.5
Bergano, Miguel	CA	IAC-21.E1.9.13
Bergemann, Christiane	CA	IAC-21.A3.IP.60
Berger, Clemens	CA	IAC-21.B4.5A-C4.8.4
Berger, Clemens	CA	IAC-21.B4.9-GTS.5.5
Berger, Thomas	CA	IAC-21.A1.5.4
Bergstrom, Alexander	CA	IAC-21.E6.5-GTS.1.6
Bergstrom, Mattias	CA	IAC-21.E6.5-GTS.1.6
Bergstrom Roos, Johanna	A	IAC-21.E6.5-GTS.1.6
Bergström, Johan	CA	IAC-21.E6.5-GTS.1.6
Bergström, Rasmus	CA	IAC-21.D2.3.9
Bergström, Rasmus	A	IAC-21.D2.7.7
Bering, Edgar	A	IAC-21.E1.3.12
Bering, Edgar	A	IAC-21.A3.4B.6
BERMUDO, Francisco	A	IAC-21.B1.2.2
Bernabei, Margherita	CA	IAC-21.C2.9.9
Bernal, Cesar	CA	IAC-21.B4.6A.12
Bernal Polo, Pablo	CA	IAC-21.D2.6.2
BERNARD, Muriel	CA	IAC-21.E1.8.4
Bernard-Cooper, Joshua	CA	IAC-21.E5.3.7
Bernardi, Pernelle	CA	IAC-21.A3.3B.2
Bernelin, Marie-Christine	CA	IAC-21.E6.4.7
Bernelin, Marie-Christine	CA	IAC-21.D2.4.10
Bernie, Anita	A	IAC-21.B4.6A.1
Bernie, Anita	A	IAC-21.D5.3.1
Bernie, Anita	A	IAC-21.E6.1.1
Berra, Federico	CA	IAC-21.B4.7.1
Bersenev, Evgeny	A	IAC-21.A1.2.2
Bersenev, Evgeny	A	IAC-21.A1.3.8
Bersenev, Evgeny	CA	IAC-21.A1.4.14
Berseneva, Irina	CA	IAC-21.A1.4.14
Bertacin, Roberto	CA	IAC-21.B4.7.13
Bertels, Eric	CA	IAC-21.B4.2.12
Bertels, Eric	CA	IAC-21.A3.2A.5
Bertels, Eric	CA	IAC-21.B2.2.3
Bertels, Eric	CA	IAC-21.B2.3.4
Bertels, Eric	CA	IAC-21.C2.6.5
Bertels, Eric	CA	IAC-21.C4.9.5
Berthet, Anne-Claire	CA	IAC-21.A3.3B.7
Berthet, Maximilien	CA	IAC-21.E3.3.2
Berti, Matteo	CA	IAC-21.C4.3.5
Bertleff, Wieland	CA	IAC-21.A3.4A.8
Bertolini, Mattia	CA	IAC-21.A3.3A.7
Bertrand, Jean	CA	IAC-21.A3.4A.8
Bertrand, Reinhold	CA	IAC-21.A6.10-B6.5.4
Bertrand, Régis	CA	IAC-21.C1.4.9
Berucci, Carolina	CA	IAC-21.A1.5.3
Besha, Patrick	CA	IAC-21.B3.1.6
Beskin, Grigoriy	CA	IAC-21.A4.1.13
Besso, Pier-Mario	CA	IAC-21.A6.1.11
Bettiol, Laura	A	IAC-21.C4.9.3
Bevilacqua, Carmelina	CA	IAC-21.E1.IP.3

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Beyer, Friederike	CA	IAC-21.A3.3A.4
Bhagat, Rohan	CA	IAC-21.A3.5.2
Bhakare, Nikita	CA	IAC-21.E3.3.2
Bhakare, Onkar	CA	IAC-21.E2.3-GTS.4.11
Bhale, Kanchan	CA	IAC-21.B2.5.5
Bhandari, Janhvi	CA	IAC-21.C4.10-C3.5.6
Bhandari, Subigyamani	CA	IAC-21.D5.1.3
Bhandari, Vijan	CA	IAC-21.D5.1.3
Bhardwaj, Derik	A	IAC-21.D2.2.12
Bhardwaj, Derik	CA	IAC-21.B6.4-B3.4.4
Bhardwaj, Pranav	CA	IAC-21.D2.7.7
Bhat, Dhruithi	CA	IAC-21.D4.1.8
Bhat, Dhruithi	CA	IAC-21.D4.1.14
Bhatia, Rachit	CA	IAC-21.A6.10-B6.5.3
Bhatia, Sahil	CA	IAC-21.B1.4.4
Bhatnagar, Ishita	CA	IAC-21.B1.4.4
Bhattacharya, Ananyo	A	IAC-21.A7.3.10
Bhattacharya, Ananyo	A	IAC-21.A7.3.11
Bhattarai, Prabin	CA	IAC-21.D5.1.3
Bhattarai, Shankar	A	IAC-21.B4.9-GTS.5.8
Bhattarai, Suresh	CA	IAC-21.E1.1.6
Bhattarai, Suresh	A	IAC-21.E1.5.8
Bhilare, Siddhi	CA	IAC-21.B3.6-A5.3.7
Bianchi, Daniele	CA	IAC-21.C4.3.5
Bianchi, Daniele	CA	IAC-21.D6.2-D2.9.4
Bianchi, Germano	CA	IAC-21.A6.9.11
Bianchi, Luca	CA	IAC-21.C4.5.9
Bianchi, Stefano	A	IAC-21.D2.1.4
Bianchi, Tiziano	CA	IAC-21.B5.1.3
Bianco, Carlo	CA	IAC-21.A1.5.11
Biasutti, Robert	A	IAC-21.B1.6.9
Bibossinov, Assylkhan	CA	IAC-21.C2.6.11
Bichisao, Lorenzo	A	IAC-21.C3.2.10
Bichisao, Lorenzo	CA	IAC-21.B1.IP.12
Bichisao, Lorenzo	CA	IAC-21.B1.5.15
Bickel, Valentin	CA	IAC-21.A3.IP.43
Biele, Jens	CA	IAC-21.A3.4A.7
Bierdel, Marius	CA	IAC-21.C2.5.4
Bigdeli, Parsa	CA	IAC-21.C2.1.4
Bihler, Markus	CA	IAC-21.A3.4A.8
Bihler, Michael	CA	IAC-21.C2.5.4
Biktimirov, Shamil	CA	IAC-21.A6.1.1
Bilkowski, Rafał	CA	IAC-21.A2.7.6
bin Rushud, Renad	CA	IAC-21.B3.6-A5.3.6
BinAshour, Mohamed	A	IAC-21.C1.9.7
Binns, David	CA	IAC-21.A3.2A.16
Biondi, Francesco	CA	IAC-21.C2.5.5
Biondi, Francesco	CA	IAC-21.C2.7.5
Birello, Edoardo	CA	IAC-21.B4.6A.11
Birello, Edoardo	CA	IAC-21.B4.7.1
Birreck, Dieter	CA	IAC-21.D2.2.5
Birtell, Eva	CA	IAC-21.A5.2.8
Bischoff, Esther	CA	IAC-21.A3.2A.3
Bish, Andrew	CA	IAC-21.C4.8-B4.5A.6
Bishop, Scott	CA	IAC-21.A1.4.7
Bissonnette, Vincent	CA	IAC-21.A3.3B.7
Biswal M, Malaya Kumar	A	IAC-21.B6.IP.12
Biswas, Janos	CA	IAC-21.A3.2A.11
Bitragunta, Sainath	CA	IAC-21.A7.2.4
Björklund, Axel	CA	IAC-21.C4.3.9
Blaber, Andrew	CA	IAC-21.A1.2.7
Black, Scott	CA	IAC-21.E1.3.10
Blackerby, Chris	A	IAC-21.E7.3.4
Blackerby, Chris	CA	IAC-21.A6.10-B6.5.1
Blaclard, Guillaume	CA	IAC-21.E1.8.5
Blair, Christian	CA	IAC-21.B6.IP.5
Blanc, Michel	CA	IAC-21.A3.1.2
Blanc, Michel	CA	IAC-21.D3.1.11
Blank, Jennifer	CA	IAC-21.D4.1.13
Blank, Jennifer	A	IAC-21.A1.6.10
Blank, Lars M.	CA	IAC-21.A3.IP.21
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Blasi, Emanuele	CA	IAC-21.E6.1.11
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Blondel-Canepari, Lily	CA	IAC-21.D6.2-D2.9.4
Blouin, Chris	CA	IAC-21.B3.9-GTS.2.6
Blumberg, Dan Gabriel	CA	IAC-21.E1.2.3
Boada, Montserrat	CA	IAC-21.A2.3.8
Bobadilla Gonzalez, Luis Carlos	CA	IAC-21.A2.2.8
Bobadilla Gonzalez, Luis Carlos	CA	IAC-21.E1.9.11
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Boehmer, Christian	CA	IAC-21.D2.2.5
Boensch, Nickolas	CA	IAC-21.E6.2.1
Boensch, Nickolas	CA	IAC-21.D2.7.4
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Boettcher, Maximilian	A	IAC-21.B4.4.2
Boev, Dimitar	CA	IAC-21.A3.2B.12
Bogachev, Evgeniy	CA	IAC-21.C4.6.8
Bogatyy, Aleksandr	CA	IAC-21.C4.6.8
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Bogosavljevic, Milan	CA	IAC-21.A3.2C.8
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Bojda, Aleksander	CA	IAC-21.E2.3-GTS.4.1
Bokhari, Hussain	CA	IAC-21.A5.1.10
Bokhari, Hussain	CA	IAC-21.A3.2C.6
Boldt, Marcelo	CA	IAC-21.D2.6.1
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Bomer, Thierry	CA	IAC-21.A2.1.2
Bonati, Davide	CA	IAC-21.B3.7.2
BONGUET, Patrick	CA	IAC-21.D2.1.4
Bonnart, Sebastien	CA	IAC-21.B1.4.4
Bonnart, Sebastien	CA	IAC-21.D5.4.5
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Bonventre, Lucia	CA	IAC-21.C2.5.7
Bonventre, Lucia	CA	IAC-21.D5.4.2
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Bordalo Monteiro, Jorge	A	IAC-21.E1.8.4
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Borelli, Giacomo	CA	IAC-21.C1.1.6
Borelli, Giacomo	A	IAC-21.A6.5.9
Borg, Ludvig	CA	IAC-21.C4.3.9
Borges, Renato	CA	IAC-21.E3.6.9
Boris, Kryuchkov	CA	IAC-21.A1.2.10
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Bortotto, Alessandro	A	IAC-21.D1.3.4
Bosboom, Thomas	CA	IAC-21.D2.3.4
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Boschetto, Alberto	CA	IAC-21.C2.9.9
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Boscia, Michela	CA	IAC-21.B4.9-GTS.5.5
Boscolo Fiore, Nicola	CA	IAC-21.E1.5.11
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Botma, Pieter	CA	IAC-21.B4.4.7
Botta, Eleonora	CA	IAC-21.C1.9.1
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Bottge, Antoine	CA	IAC-21.A5.2.7
Boudad, Kenza	A	IAC-21.C1.5.5
Boumchita, Wail	A	IAC-21.C1.7.13
Bourabah, Derek	A	IAC-21.C1.9.1
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Bousquet, Pierre W.	CA	IAC-21.D3.1.11
BOUTTE, Pierre	CA	IAC-21.D3.2A.5
Bower, Dina	CA	IAC-21.A5.2.13
Boyer, Laure	CA	IAC-21.B3.5.3
Bozkurt, Ayhan	CA	IAC-21.B4.2.2
Bracho, Mary	CA	IAC-21.B5.2.5
Bradfield, Justin	CA	IAC-21.B2.3.3
Bradford, Kristi	A	IAC-21.E6.3.6
Brady, Gary	CA	IAC-21.A3.2B.6
Brady, Gary	CA	IAC-21.A3.IP.14
Brady, Gary	CA	IAC-21.A3.IP.32
Brady, Gary	CA	IAC-21.A3.2C.15
Brain, David	CA	IAC-21.A3.3A.1
Brandborg Sørensen, René	CA	IAC-21.B2.1.1

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Brandić Lipińska, Monika	A	IAC-21.E5.1.7
Brandić Lipińska, Monika	CA	IAC-21.E5.3.8
Brandić Lipińska, Monika	CA	IAC-21.A3.2C.2
Brandolini, Efraim	CA	IAC-21.A6.1.13
Brandolini, Efraim	CA	IAC-21.B4.3.2
Brandoniso, Andrea	CA	IAC-21.A5.1.13
Brandoniso, Andrea	CA	IAC-21.B6.3.5
Brandt, Pontus	CA	IAC-21.D4.4.1
Brandt, Pontus	A	IAC-21.D4.4.2
Brandt, Summer	CA	IAC-21.B3.4-B6.4.12
Brandão, Ana	CA	IAC-21.C2.5.10
Brandão, Ana	CA	IAC-21.C2.9.9
Branz, Francesco	CA	IAC-21.C1.1.6
Branz, Francesco	CA	IAC-21.D1.3.4
Branz, Francesco	CA	IAC-21.A6.5.10
Branz, Francesco	CA	IAC-21.B4.6A.11
Branz, Francesco	CA	IAC-21.C1.8.7
Bratu, Ioana	A	IAC-21.E7.7.10
Braun, Christian	CA	IAC-21.A3.2A.3
Braun, Vitali	CA	IAC-21.A6.3.6
Braun, Vitali	A	IAC-21.A6.2.2
Bravo, Juan Ignacio	CA	IAC-21.B5.1.3
Breda, Paola	CA	IAC-21.D3.2B.7
Breit, Helko	CA	IAC-21.B5.1.3
Breit, Helko	CA	IAC-21.B6.2.9
Breitenbücher, Laura	CA	IAC-21.B4.IP.13
Brenna, Marco Paolo	A	IAC-21.B4.2.7
Bresler, Karol	CA	IAC-21.D2.5.10
Breton, Sylvain	CA	IAC-21.A3.2A.7
Breton, Sylvain	A	IAC-21.A3.IP.39
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Brette, Harriet	CA	IAC-21.A6.6.3
Breuer, Stefan	CA	IAC-21.A6.7.3
Briand, Carine	CA	IAC-21.A6.9.2
Brichta, Michal	A	IAC-21.E3.6.8
Brieler, Isabel	CA	IAC-21.D5.1.8
Briese, Låle Evrim	CA	IAC-21.D2.6.1
Brighenti, Chiara	A	IAC-21.B6.IP.7
Brighenti, Francesco	CA	IAC-21.B6.IP.7
Brigos, Miguel	CA	IAC-21.E1.3.14
Brigos, Miguel	CA	IAC-21.A2.3.8
Brinkmann, Wiebke	CA	IAC-21.A3.2B.9
Brito, Claude-Martin	CA	IAC-21.C4.5.6
Britov, Andrey	CA	IAC-21.E2.3-GTS.4.3
Britting, Thomas	CA	IAC-21.D2.3.4
Broquetas, Antoni	CA	IAC-21.E2.3-GTS.4.10
Brouma, Panagiota	CA	IAC-21.E7.1.1
Brouwer, Hugo	A	IAC-21.B4.4.7
Brovar, Yana	CA	IAC-21.D1.4A.10
Brovelli, Maria Antonia	CA	IAC-21.E1.2.7
Brown, Allen	CA	IAC-21.D3.3.6
Brown, Eboni	CA	IAC-21.A5.1.12
Brown, Mark	CA	IAC-21.A6.4.10
Browne, David	CA	IAC-21.A2.3.5
Bru, Jorgen	A	IAC-21.D2.2.1
Brun, Kammy	A	IAC-21.B2.1.6
Brun, Kammy	A	IAC-21.B6.1.2
Brun, Kammy	A	IAC-21.B1.2.4
Brun, Kammy	A	IAC-21.B4.4.4
Brun, Kammy	A	IAC-21.B1.5.4
Brunat, Mathis	CA	IAC-21.E5.4.2
Brune, Eric	CA	IAC-21.B4.2.9
Brunello, Alice	CA	IAC-21.A6.4.9
Brunello, Alice	CA	IAC-21.A6.5.2
Brunello, Alice	CA	IAC-21.C1.9.6
Brunner, Bernhard	CA	IAC-21.D1.6.2
Brunner, Sebastian	CA	IAC-21.A3.2A.3
Brunskill, Chris	A	IAC-21.A6.IP.16
Bruzat, Melissa	CA	IAC-21.E5.4.2
Brzostowicz, Nadia Weronika	A	IAC-21.E2.2.7
Brûlé, Luc	CA	IAC-21.B1.6.11
Bucchioni, Giordana	A	IAC-21.C1.4.9
Bucci, Lorenzo	CA	IAC-21.A3.2C.9
Bucci, Lorenzo	CA	IAC-21.B2.6.5
Buchholz, Maximilian	CA	IAC-21.C4.1.6

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Buchs, Romain	CA	IAC-21.A6.8-E9.1.5
Buckey, Jay	CA	IAC-21.A1.2.6
Buckingham, Sophia	CA	IAC-21.D2.5.2
Buckland, Dan	CA	IAC-21.A1.3.12
Buckley, Karl	CA	IAC-21.D1.4A.8
Buckner, Denise	CA	IAC-21.E3.2.5
Budiantoro, Poki Agung	A	IAC-21.C2.1.3
Budiantoro, Poki Agung	CA	IAC-21.C3.3.6
Budnik, Sergey	CA	IAC-21.C2.8.2
Bugnet, Olivier	A	IAC-21.D2.2.2
Bulat, Sergey	A	IAC-21.A1.6.3
Bulgarini, Asia	A	IAC-21.A7.2.10
Bulla, Sophie	CA	IAC-21.D1.IP.3
Bultitude, James	A	IAC-21.B4.6A.9
Bultitude, James	CA	IAC-21.C4.9.7
Bunka, Sam	A	IAC-21.E2.2.12
Bunka, Sam	A	IAC-21.B2.5.3
Bunka, Sam	A	IAC-21.E1.IP.4
Burderi, Luciano	CA	IAC-21.B4.7.14
Burgdorf, Jonas	CA	IAC-21.D1.2.3
Burger, Edward	A	IAC-21.D5.4.8
Burhani, Burhani	CA	IAC-21.C1.4.2
Burhani, Burhani	A	IAC-21.C1.5.6
Burkhardt, Zachary	CA	IAC-21.B4.6A.9
Burkhardt, Zachary	CA	IAC-21.C4.9.7
Burlton, Bruce	CA	IAC-21.B2.IP.2
Burnichon, Marion	A	IAC-21.E2.3-GTS.4.4
Burnichon, Marion	A	IAC-21.B4.8.2
Burnside, Michael	CA	IAC-21.E5.4.7
Burtz, Louis-Jerome	CA	IAC-21.B1.4.1
Burville, Kevin	CA	IAC-21.A2.1.8
Burville, Kevin	A	IAC-21.B1.5.5
Burville, Kevin	A	IAC-21.B4.8.10
Busa, Joel	CA	IAC-21.B3.9-GTS.2.3
Busch, Stephan	CA	IAC-21.A6.1.4
Buse, Fabian	A	IAC-21.A3.4A.8
Busom Vidal, Arnau	CA	IAC-21.A2.5.10
Busoud, Amna	CA	IAC-21.A3.IP.15
Busoud, Amna	A	IAC-21.C2.7.13
Busoud, Amna	CA	IAC-21.A3.2C.8
Bussler, Leonid	CA	IAC-21.D2.5.2
Bussmann, Adam	CA	IAC-21.C4.3.9
Bussmann, Kristin	CA	IAC-21.A3.2A.3
But, Alexandru	CA	IAC-21.D1.1.1
But, Alexandru	CA	IAC-21.A3.2B.9
Butscher, Teddy	CA	IAC-21.A1.5.11
Butte, Vaishnavi	CA	IAC-21.E2.4.14
Buttolo, Marco	CA	IAC-21.E6.1.11
Bysell, Max	CA	IAC-21.C4.3.9
Bywater, Sophie	CA	IAC-21.D3.2A.8
Bérend, Nicolas	CA	IAC-21.D2.4.10
Bérend, Nicolas	A	IAC-21.E4.2.4
Bérend, Nicolas	CA	IAC-21.E3.4.2
Bérubé, Pascale	CA	IAC-21.D3.2B.7
Bögel, Elias	CA	IAC-21.C2.4.7
Bögel, Elias	CA	IAC-21.C4.6.7
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Bögel, Elias	CA	IAC-21.A3.2C.9
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Chana, Nivraj	CA	IAC-21.D3.2B.9
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Chen, Yen-Kai	CA	IAC-21.A6.8-E9.1.4
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Chenevey, Elise	CA	IAC-21.D2.7.4
Cheng, Haowen	CA	IAC-21.A6.7.10
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Chern, Jeng-Shing (Rock)	CA	IAC-21.E5.5.5
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Chizzolini, Barbara	CA	IAC-21.D4.5.1
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Choi, Sang-Hyeon	A	IAC-21.D2.7.6
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Ciancarelli, Carlo	CA	IAC-21.B1.2.13
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Cifani, Giorgio	CA	IAC-21.A3.2A.10
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Condurache, Daniel	A	IAC-21.C1.6.8
Conforti, Gabriele	A	IAC-21.A6.9.6
Conte, Andrea	CA	IAC-21.E2.3-GTS.4.7
Contractor, Noshir	CA	IAC-21.A1.1.4
Contreras, Ricardo	CA	IAC-21.B4.6B.11
Cope, Henry	CA	IAC-21.E2.4.9
Coppa, Edoardo	CA	IAC-21.C4.3.9
Corallo, Francesco	CA	IAC-21.C1.5.12
Corbelli, Alberto	A	IAC-21.B4.6A.12
Cordelli, Emiliano	A	IAC-21.A6.6.2
Cordes, Florian	CA	IAC-21.A3.3B.7
Cordesse, Pierre	CA	IAC-21.C4.6.6
Corinaldesi, Giovanni	CA	IAC-21.D1.6.1
Cormier, Luis	CA	IAC-21.E2.4.9
Cornara, Stefania	CA	IAC-21.C1.5.8
Cornara, Stefania	CA	IAC-21.B2.5.7
Cornara, Stefania	CA	IAC-21.B4.9-GTS.5.1
Cornara, Stefania	A	IAC-21.B6.2.9
Cornet, Benoit	CA	IAC-21.A3.2C.12
Corpino, Sabrina	CA	IAC-21.D1.IP.8
Correia, Alexandre	CA	IAC-21.E1.9.13
Cortes, Christophe	CA	IAC-21.B1.2.9
Cortêsão, Marta	CA	IAC-21.A2.7.2
Costa, Emanuele	CA	IAC-21.B4.2.12
Costa, Emanuele	CA	IAC-21.A3.2A.5
Costa, Henrique	A	IAC-21.C4.9.10
Costantini, Lorenzo	CA	IAC-21.A1.2.5
Costantini, Martial	A	IAC-21.B3.6-A5.3.1
Costantini, Martial	A	IAC-21.B3.7.1
Costantino, Francesco	CA	IAC-21.C2.9.9
Costanzi, Marco	CA	IAC-21.C2.6.1
Costella, Giulia	A	IAC-21.E3.1.5
Costella, Giulia	CA	IAC-21.A3.IP.58
Costella, Giulia	A	IAC-21.B1.IP.12
Costella, Giulia	CA	IAC-21.B1.5.15
Costello, Kirt	CA	IAC-21.B3.3.8
Cosyn, Philippe	CA	IAC-21.E4.1.11

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Name	Role	Paper
Cotronei, Vittorio	CA	IAC-21.E1.2.5
Cotronei, Vittorio	CA	IAC-21.B3.3.2
Cotronei, Vittorio	CA	IAC-21.B3.3.8
Cotugno, Patrizia	CA	IAC-21.D1.2.2
Countryman, Stefanie	CA	IAC-21.A1.3.6
Countryman, Stefanie	CA	IAC-21.A2.7.2
Court, Andrew	A	IAC-21.E6.4.12
Courtois, Jonathan	CA	IAC-21.D3.2B.10
Coustenis, Athena	A	IAC-21.A3.1.5
Couvertier, Jose	CA	IAC-21.A1.8.5
Covasan, Victor	CA	IAC-21.D3.2B.7
Cowley, Aidan	CA	IAC-21.B3.6-A5.3.1
Cowley, Aidan	CA	IAC-21.B3.7.1
Craig, Doug	A	IAC-21.A5.1.18
Craig, Douglas	CA	IAC-21.A3.1.12
Cranstoun, Charles	CA	IAC-21.D3.2A.8
Creed, Lewis	A	IAC-21.A6.1.2
Creed, Lewis	CA	IAC-21.E2.4.2
Creed, Lewis	CA	IAC-21.A6.2.10
Crespo, Juan Carlos	CA	IAC-21.E5.2.6
Crespo Serrano, Alvaro	CA	IAC-21.E2.3-GT5.4.4
Crespo Serrano, Alvaro	CA	IAC-21.B4.8.2
Crifasi, Adam	CA	IAC-21.B2.3.3
Crisconio, Marino	CA	IAC-21.B3.4-B6.4.5
Crisconio, Marino	CA	IAC-21.A1.5.3
Crisp, Nicholas H.	A	IAC-21.B4.2.10
Crisp, Nicholas H.	CA	IAC-21.C2.6.8
Critchley-Marrows, Joshua	CA	IAC-21.E5.IP.6
Crocker, Andrew	A	IAC-21.B3.8.7
Crocker, Andy	CA	IAC-21.A5.1.7
Croft, Steve	A	IAC-21.A4.1.1
Croft, Steve	CA	IAC-21.A4.1.7
Croison, Charlotte	CA	IAC-21.A3.1.1
Croison, Charlotte	A	IAC-21.A6.8-E9.1.11
Cronje, Rikus	CA	IAC-21.B5.3.1
Cropp, Alexander	CA	IAC-21.A3.2A.9
Cropp, Alexander	CA	IAC-21.A3.2A.10
Cropp, Alexander	CA	IAC-21.B2.6.5
Cross, Matthew	CA	IAC-21.A3.2B.8
Crouzet, Estelle	CA	IAC-21.A2.5.10
Cuba Mamani, Jaime Gerson	A	IAC-21.B4.9-GT5.5.3
Cubas, Javier	CA	IAC-21.E1.8.4
Cudek, Pavel	CA	IAC-21.C3.IP.1
Cuenot, Bénédicte	CA	IAC-21.C4.1.1
Cuffolo, Aurélien	CA	IAC-21.D3.2B.10
Cui, Kaixin	A	IAC-21.A5.2.8
Cui, Pingyuan	CA	IAC-21.C1.2.6
Cui, Pingyuan	CA	IAC-21.C1.4.10
Cui, Pingyuan	CA	IAC-21.B2.7.4
Cui, Pingyuan	CA	IAC-21.B2.7.6
Cujko, Lari	CA	IAC-21.A3.2C.11
Cullum, Thomas	CA	IAC-21.C4.8-B4.5A.6
Cunningham, Grant	CA	IAC-21.D1.1.4
Cupertino, Francesco	CA	IAC-21.E2.1.4
Curado da Silva, Rui	CA	IAC-21.B4.2.5
Curci, Guido	CA	IAC-21.B5.1.3
Curianò, Federico	CA	IAC-21.B4.1.9
Curianò, Federico	CA	IAC-21.B4.3.11
Curianò, Federico	CA	IAC-21.B4.9-GT5.5.5
Curianò, Federico	CA	IAC-21.A6.10-B6.5.9
Curianò, Federico	CA	IAC-21.B2.7.8
Currie, Deborah	CA	IAC-21.E1.2.11
Curti, Fabio	CA	IAC-21.A6.9.6
Curti, Fabio	CA	IAC-21.A6.IP.21
Curti, Fabio	CA	IAC-21.A3.4B.7
Curti, Gianni	CA	IAC-21.A3.3A.7
Cutler, James	CA	IAC-21.B4.3.11
Cutler, James	CA	IAC-21.A6.10-B6.5.9
Cuéllar, Francisco	A	IAC-21.A2.IP.1
Cwilichowska, Natalia	CA	IAC-21.B3.1.5
Czaplinski, Ellen	CA	IAC-21.A3.IP.43
Czech, Daniel	CA	IAC-21.A4.1.7
Cziep, Tatjana	CA	IAC-21.D1.3.1
Cziep, Tatjana	A	IAC-21.D1.4A.5
Câmara, Francisco	CA	IAC-21.B4.7.2

Name	Role	Paper
D		
D'Agostinis, Giorgia	CA	IAC-21.B5.1.15
D'Ambrosio, Elia	CA	IAC-21.A3.5.2
D'Ambrosio, Andrea	CA	IAC-21.A3.4B.7
D'Aronco, Stefano	CA	IAC-21.B1.4.12
D'Silva, Rachel	CA	IAC-21.C4.9.9
da Costa Guerreiro Teixeira, Filipe Alexandre	CA	IAC-21.A5.2.12
Da Fonseca, Ijar	A	IAC-21.C2.3.7
da Mata, Henrique Oliveira	A	IAC-21.B6.3.9
da Silva, Rodrigo	CA	IAC-21.E2.4.9
da Silva Curiel, Alex	CA	IAC-21.B4.4.1
da Silva Curiel, Alex	CA	IAC-21.B4.4.12
da Silva Pais Cabral, Francisco	CA	IAC-21.C4.9.10
da Silva Pais Cabral, Francisco	CA	IAC-21.A3.4B.3
da Silveira Rêgo, Israel	CA	IAC-21.D2.5.14
Daddi, Guglielmo	A	IAC-21.D1.IP.8
Dade-Roberston, Martyn	CA	IAC-21.E5.1.7
Dafnis, Athanasios	CA	IAC-21.D2.7.7
Dai, Kan	CA	IAC-21.C4.2.13
Dai, Lei	CA	IAC-21.B1.2.12
Dai, Wei	A	IAC-21.D2.IP.2
Dai, Weizong	CA	IAC-21.B6.IP.11
Daimon, Yu	CA	IAC-21.A2.4.4
Daka, Naga Bharath	CA	IAC-21.B3.IP.4
Dalla Vedova, Florio	CA	IAC-21.D1.IP.4
Dalla Vedova, Florio	CA	IAC-21.D1.5.6
Dalledonno, Sara	A	IAC-21.E7.7.7
Dallimore, Jack	CA	IAC-21.E6.1.3
Dammann, Armin	CA	IAC-21.A5.3-B3.6.5
Damp, Lloyd	CA	IAC-21.D2.6.2
Dankiewicz, Ivan	CA	IAC-21.D1.4A.8
Dannenberg, Kristine	CA	IAC-21.A7.1.5
Dannenberg, Kristine	A	IAC-21.A2.5.2
Dansberry, Bryan	A	IAC-21.B3.3.8
Dansereau, Spencer	CA	IAC-21.B3.6-A5.3.7
Danter, Leon Cedric	CA	IAC-21.A3.2B.9
Dariya, Grechkovskaya	CA	IAC-21.A1.2.2
Darya, Abdollah	CA	IAC-21.A3.3A.2
Das, Gargi	A	IAC-21.C1.8.9
Das, Ishita	A	IAC-21.E7.5.7
Das, Satadal	A	IAC-21.A1.IP.9
Das, Swagat	CA	IAC-21.A3.5.2
Das, Tirtha Pratim	CA	IAC-21.B2.5.8
Das Rajkakati, Priyanka	CA	IAC-21.A3.2B.6
Das Rajkakati, Priyanka	A	IAC-21.E5.3.1
Das Rajkakati, Priyanka	A	IAC-21.A3.2C.16
Dasbach, Thomas	CA	IAC-21.D1.1.2
Dashdondog, Erdenebaatar	CA	IAC-21.B4.1.6
Data, Prabhpreet	CA	IAC-21.A1.IP.2
Datta, Shireen	CA	IAC-21.E1.4.8
Dauner, Johannes	A	IAC-21.C1.8.2
Dauriskikh, Anna	CA	IAC-21.A3.2A.16
Dauth, Matthias	CA	IAC-21.B6.1.8
Dauvois, Yann	CA	IAC-21.D2.3.1
Dave, Anilkumar	A	IAC-21.B3.7.2
Davenport, Robert	CA	IAC-21.A3.2A.16
David, Emmanuelle	A	IAC-21.A6.8-E9.1.5
Davidian, Ken	CA	IAC-21.D6.1.1
Davidian, Ken	A	IAC-21.E6.3.9
Davis, Diane	CA	IAC-21.C1.5.5
Dayarathna, Tharindu	CA	IAC-21.B4.2.3
Dayarathna, Tharindu	CA	IAC-21.B4.3.3
De, Ashoke	CA	IAC-21.C4.2.6
de Almeida, Délcio	A	IAC-21.D1.2.9
de Almeida, Délcio	CA	IAC-21.B6.1.3
De Amicis, Giovanni	CA	IAC-21.B4.4.3
De Astis, Elisa	CA	IAC-21.E1.5.11
de Beaufort, Hubert	CA	IAC-21.B4.4.4
de Beaufort, Hubert	CA	IAC-21.B1.5.4
De Benedetti, Matteo	CA	IAC-21.A3.2B.9
de Brito do Nascimento Filho, Renato	CA	IAC-21.C4.3.10
de Brito do Nascimento Filho, Renato	CA	IAC-21.C4.4.3

Name	Role	Paper
de Brito do Nascimento Filho, Renato	A	IAC-21.C4.4.12
De Carlo, Paola	A	IAC-21.B2.5.1
de Carvalho Paulino, Ângelo	CA	IAC-21.D2.5.14
De Donato, Cinzia	CA	IAC-21.A1.5.3
de Groot, Zeger	CA	IAC-21.B4.4.7
de Jong, Nicolás	A	IAC-21.E2.3-GTS.4.9
de Korte, Marieke	CA	IAC-21.E1.5.6
de Korte, Marieke	A	IAC-21.A1.8.2
De Laet, Chloe	CA	IAC-21.B3.9-GTS.2.8
De Laet, Chloë	A	IAC-21.B3.9-GTS.2.7
de Lange, Dorus	CA	IAC-21.B2.2.3
de Leon, Pablo	CA	IAC-21.B3.7.9
De Luca, Giuseppe	CA	IAC-21.E1.5.11
De Maestri, Maria Elena	A	IAC-21.E7.5.1
De Oliveira, Alice	CA	IAC-21.D2.4.6
de Oliveira, Élcio Jeronimo	CA	IAC-21.C4.3.9
de Oliveira, Élcio Jeronimo	CA	IAC-21.C2.3.1
de Oliveira, Élcio Jeronimo	CA	IAC-21.D2.3.7
de Oliveira, Élcio Jeronimo	A	IAC-21.D2.5.14
de Oliveira, Élcio Jeronimo	CA	IAC-21.B4.7.3
de Oliveira, Élcio Jeronimo	A	IAC-21.D2.7.9
De Palma, Gaia	CA	IAC-21.A3.2B.6
De Palo, Vincenzo	CA	IAC-21.E5.4.10
De Pascale, Stefania	CA	IAC-21.B4.9-GTS.5.5
De Ridder, Malika	A	IAC-21.A2.2.2
De riggi, Marco	CA	IAC-21.D3.2B.9
De Santis, Cristian	CA	IAC-21.B3.7.7
de Souza, Petrônio Noronha	CA	IAC-21.E7.5.10
De Stefano, Marco	CA	IAC-21.D1.1.1
de Séréville, Grégoire	CA	IAC-21.E2.3-GTS.4.16
De Vito, Corrado	CA	IAC-21.B5.2.3
De Vittori, Andrea	CA	IAC-21.A6.7.9
de Weck, Olivier	CA	IAC-21.C4.IP.7
de Winter, Bram	A	IAC-21.E5.2.7
de Winter, Bram	A	IAC-21.E1.IP.8
De Zaiacomo, Gabriele	CA	IAC-21.D2.4.6
Dean, Bryan	CA	IAC-21.B1.3.9
Dean, Bryan	CA	IAC-21.B5.3.1
Dean, Bryan	CA	IAC-21.B1.IP.21
DeBoer, David	CA	IAC-21.A4.1.7
Debus, André	CA	IAC-21.A3.3B.2
DeChurch, Leslie	CA	IAC-21.A1.1.4
DECONINCK, Florian	A	IAC-21.B4.4.13
Dee, Jan Clarence	CA	IAC-21.A3.1.1
Deeken, Jan	CA	IAC-21.C4.1.8
Deeken, Jan	CA	IAC-21.D6.2-D2.9.4
DeGarmo, Albert	A	IAC-21.B1.6.3
Degli Agli, Giuliano	CA	IAC-21.D1.3.4
Dehant, Veronique	CA	IAC-21.A3.1.2
Dehant, Veronique	CA	IAC-21.D3.1.11
Dei Tos, Diogene Alessandro	CA	IAC-21.C1.5.1
Dei Tos, Diogene Alessandro	CA	IAC-21.C1.7.5
Deighan, Justin	CA	IAC-21.A3.3A.1
Deighan, Justin	CA	IAC-21.A3.3B.1
Deighan, Justin	CA	IAC-21.A3.IP.1
Deiml, Michael	CA	IAC-21.A3.2A.11
del Barco, María	CA	IAC-21.A2.6.4
Del Bianco, Marta	CA	IAC-21.B4.9-GTS.5.5
del Blanco, Fernando	CA	IAC-21.C1.3.8
Del Campo, Borja	CA	IAC-21.A6.2.6
Del Mastro, Antonio	CA	IAC-21.B1.1.5
Del Prete, Roberto	CA	IAC-21.B1.5.13
Del Prete, Roberto	A	IAC-21.B2.7.5
Del Rio Vera, Jorge	A	IAC-21.B4.1.1
Del Rio Vera, Jorge	A	IAC-21.D3.1.10
Del Rio Vera, Jorge	A	IAC-21.A2.3.10
Delaval, Jessica	CA	IAC-21.E3.4.4
Deleflie, Florent	CA	IAC-21.A6.9.2
Deleflie, Florent	CA	IAC-21.C1.7.6
Delepaut, Christophe	CA	IAC-21.A3.2A.8
Deleye, Pieter	CA	IAC-21.D3.2B.7
Delfa, Juan	CA	IAC-21.D1.4A.8
Delfini, Andrea	A	IAC-21.C2.6.1
Delfini, Andrea	CA	IAC-21.C2.8.2
Delgado, Héctor	CA	IAC-21.E1.2.2

Name	Role	Paper
Delgado, Héctor	CA	IAC-21.E1.3.6
Delgado, Héctor	CA	IAC-21.A2.2.8
Delgado, Héctor	CA	IAC-21.A2.2.10
Delgado, Héctor	CA	IAC-21.A5.3-B3.6.10
Delgado, Héctor	CA	IAC-21.A1.IP.13
Delgado, Héctor	CA	IAC-21.B4.IP.3
Delgado, Héctor	CA	IAC-21.E5.IP.12
Delgado, Héctor	CA	IAC-21.E1.9.11
Delgado Centeno, Jose Ignacio	A	IAC-21.A3.IP.61
Dell'Aversana, Pasquale	CA	IAC-21.C2.4.3
Delley, Diane	A	IAC-21.A2.5.5
Delporte, Jérôme	CA	IAC-21.A2.1.2
DeMarines, Julia	CA	IAC-21.A4.1.7
Demarzo, Marcela	CA	IAC-21.A3.2C.15
Demeillers, Thomas	CA	IAC-21.E2.3-GTS.4.12
Demling, Philipp	CA	IAC-21.A3.IP.21
Demory, Brice-Olivier	CA	IAC-21.A7.3.7
den Heijer, Daniel	CA	IAC-21.A3.2B.6
Denaro, Angelo	A	IAC-21.D2.6.6
Denetro Fragoso, José de Jesús	CA	IAC-21.E1.6.2
Deneu, François	CA	IAC-21.D2.1.4
Deneu, François	CA	IAC-21.D2.1.4
Deneu, François	CA	IAC-21.D2.1.4
Deng, Jianfeng	CA	IAC-21.B1.2.12
Deng, Jianfeng	A	IAC-21.A7.3.9
Dengel, Ric	A	IAC-21.D1.3.7
Dengel, Ric	CA	IAC-21.A2.5.5
Dengel, Ric	CA	IAC-21.A2.5.10
Denisov, Mikhail	CA	IAC-21.E2.3-GTS.4.3
Dentler, Jan	CA	IAC-21.D1.6.7
Deodhar, Akshay	CA	IAC-21.E2.3-GTS.4.11
Deodhar, Akshay	CA	IAC-21.E2.4.13
Deremetz, Mathieu	A	IAC-21.D1.1.1
Deremetz, Mathieu	CA	IAC-21.A3.2A.11
Deremetz, Mathieu	CA	IAC-21.D3.2A.2
Deremetz, Mathieu	A	IAC-21.D1.6.2
Dermer, Elad	CA	IAC-21.D1.4B.1
Desai, Nilesh	CA	IAC-21.B3.1.4
Desai, Nilesh M	CA	IAC-21.B2.5.8
DESMARIAUX, Jean	CA	IAC-21.D2.6.1
Desprez, Louis	CA	IAC-21.D3.2B.9
Desvallées, Patrice	A	IAC-21.D2.4.10
Detera, Bernadette Joy	A	IAC-21.D4.2.3
Detera, Bernadette Joy	CA	IAC-21.E3.2.11
Detrell, Gisela	A	IAC-21.A1.7.3
Deutch, Alexander	CA	IAC-21.C4.9.7
Dhahal, Prabin	CA	IAC-21.D5.1.3
Dharmadhikari, Abhishek	CA	IAC-21.E2.4.13
Dharmarajan, Karthick	A	IAC-21.C1.IP.5
Dharmarajan, Karthick	A	IAC-21.A7.3.8
Dhiyaneeswaran, Sowndariya	CA	IAC-21.D2.3.4
Dhoju, Simran	CA	IAC-21.D5.1.3
Dhoju, Simran	CA	IAC-21.E3.2.11
Dhunnoo, Kirtan	A	IAC-21.A2.7.8
Di Battista, Ruben	CA	IAC-21.E2.3-GTS.4.6
Di Cara, Davina	CA	IAC-21.C4.5.9
Di Cecco, Alessandra	CA	IAC-21.A6.7.9
Di Costanzo, Giuseppe	CA	IAC-21.B3.4-B6.4.5
Di Domenico, Gianfranco	A	IAC-21.D4.1.1
Di Fede, Simone	CA	IAC-21.C4.6.3
Di Fino, Luca	CA	IAC-21.A1.5.3
Di Fraia, Marco Zaccaria	CA	IAC-21.B1.4.4
Di Lauro, Carmine	CA	IAC-21.A3.IP.12
Di Lizia, Pierluigi	CA	IAC-21.B4.2.12
Di Lizia, Pierluigi	CA	IAC-21.A3.2A.5
Di Lizia, Pierluigi	CA	IAC-21.A6.9.11
Di Lizia, Pierluigi	CA	IAC-21.A3.3A.7
Di Lizia, Pierluigi	CA	IAC-21.A6.7.9
Di Lizia, Pierluigi	CA	IAC-21.A6.10-B6.5.5
Di Mira, Andrea	CA	IAC-21.A6.6.2
Di Nicola, Miriam	CA	IAC-21.D4.5.1
Di Nunzio, Clara	CA	IAC-21.B2.7.8
di Palo, Luigi	CA	IAC-21.B2.7.8
Di Pippo, Simonetta	CA	IAC-21.B4.1.1
Di Pippo, Simonetta	CA	IAC-21.D3.1.10

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Name	Role	Paper
Di Pippo, Simonetta	CA	IAC-21.A2.3.10
Di Pippo, Simonetta	CA	IAC-21.B5.2.1
Di Roberto, Riccardo	CA	IAC-21.A6.1.13
Di Roberto, Riccardo	CA	IAC-21.B4.3.2
Di Roberto, Riccardo	CA	IAC-21.B4.6A.10
Di Salvo, Tiziana	CA	IAC-21.B4.7.14
Di Tana, Valerio	CA	IAC-21.B3.4-B6.4.5
Diamanti, Eleni	CA	IAC-21.B4.7.1
Diaz, Jonathan	CA	IAC-21.B4.IP.15
Diaz Artilles, Ana	CA	IAC-21.A1.1.8
Diaz Montiel, Miguel	CA	IAC-21.E5.4.7
Diaz Riofrio, Sebastian	CA	IAC-21.A6.1.2
Diaz-Carrasco, Montserrat	A	IAC-21.D1.6.5
Diaz-Flores, Alvaro	A	IAC-21.A3.2B.10
Diba, Milad	CA	IAC-21.B4.2.2
Dickey, Robin	A	IAC-21.E3.4.5
Diedrich, Thomas	CA	IAC-21.A3.IP.22
Dieppedalle, Guillaume	CA	IAC-21.E5.IP.6
Dierks, Björn	CA	IAC-21.A2.5.5
Dietlein, Ingrid Monika	CA	IAC-21.D2.3.1
Dietrich, George B.	CA	IAC-21.D1.5.4
Dietz, Enrico	CA	IAC-21.A3.1.7
Dietz, Enrico	CA	IAC-21.A3.2A.3
Dignani, Daniele	CA	IAC-21.B4.6A.12
Dillikar, Sairaj	CA	IAC-21.A4.2.17
Dimare, Linda	A	IAC-21.A6.3.6
Ding, Xi	CA	IAC-21.D2.2.7
Dissaux, Pierre	CA	IAC-21.D3.2A.2
DiTommaso, Alex	A	IAC-21.E2.2.1
Dittel Tórtós, Valeria	CA	IAC-21.A2.6.4
Divsalar, Donya Naz	A	IAC-21.A1.2.7
Divsalar, Donya Naz	CA	IAC-21.B1.5.5
Divsalar, Donya Naz	CA	IAC-21.B4.8.10
Dixon, Jordan	A	IAC-21.A1.2.4
Dixon, Tom	CA	IAC-21.D1.IP.3
Djordjevic, Stefan Aleksa	A	IAC-21.E6.2.6
Djordjevic, Stefan Aleksa	CA	IAC-21.D5.4.7
Dmitrienko, Alexandra	CA	IAC-21.D5.4.1
Dmitriev, Vladimir	CA	IAC-21.B3.5.2
Do, Sydney	CA	IAC-21.A3.3A.5
Doelman, David	CA	IAC-21.A7.3.7
Doknjas, Alexander	CA	IAC-21.C1.8.7
Dolado Perez, Juan Carlos	CA	IAC-21.A6.2.3
Dombrovski, Slavi	A	IAC-21.B4.3.6
Dombrovski, Slavi	CA	IAC-21.B4.7.8
Domingos, Caio Henrique Franco Levi	A	IAC-21.C4.3.10
Domingos, Caio Henrique Franco Levi	CA	IAC-21.C4.4.12
Dominguez Calabuig, Guillermo Joaquin	CA	IAC-21.D2.4.6
Dominguez Calabuig, Guillermo Joaquin	CA	IAC-21.D6.2-D2.9.4
Dominguez, Raúl	CA	IAC-21.A3.3B.7
Dominguez Castillo, Adalberto	A	IAC-21.A3.4B.3
Donahue, Benjamin	CA	IAC-21.B3.8.12
Donati, Annalisa	CA	IAC-21.E1.2.7
Donati, Annalisa	CA	IAC-21.B5.2.9
Donati, Annalisa	CA	IAC-21.E5.3.4
Dong, Meng	A	IAC-21.C4.IP.17
Donlon, Craig	CA	IAC-21.B1.2.8
Donovan, Diana	CA	IAC-21.A1.3.3
Dooner, Caeden	CA	IAC-21.C2.6.3
Doraisingam, Shankini	CA	IAC-21.A1.3.6
Doraisingam, Shankini	CA	IAC-21.A2.7.2
Dorau, Tim	A	IAC-21.C4.1.6
Dorn, Chris	CA	IAC-21.A6.1.10
Dotson, David	A	IAC-21.C3.1.3
Doucet, Adrien	CA	IAC-21.C4.8-B4.5A.6
Dowding, Nicolas	CA	IAC-21.A3.1.9
Dowding, Nicolas	CA	IAC-21.E2.3-GTS.4.12
Dowling, Jason	CA	IAC-21.D3.1.7
Doyle, Eanna	CA	IAC-21.E5.IP.6
Dragomir, Iulia	CA	IAC-21.A3.3B.7
Dragonetti, Walter	CA	IAC-21.A3.IP.38
Drake, Ginger	CA	IAC-21.A3.3B.1
Drake, Ginger	CA	IAC-21.A3.IP.29
Draschka, Lukas	A	IAC-21.B4.4.6
Drego, Adelia	CA	IAC-21.E5.IP.6

Name	Role	Paper
DREIER, Maximilien	A	IAC-21.E2.3-GTS.4.18
Dresscher, Martijn	A	IAC-21.B2.2.3
Dreus, Andrii	CA	IAC-21.C4.4.11
Drew, Jamie	CA	IAC-21.A4.1.7
Drewczynski, Wojciech	CA	IAC-21.E6.5-GTS.1.9
Dreyer, Heiko	CA	IAC-21.A6.6.2
Driebe, Thomas	CA	IAC-21.B3.3.7
Driggers, Philipp A.	CA	IAC-21.A3.2A.8
Drimaco, Daniela	CA	IAC-21.B1.4.7
Drobny, Christian	CA	IAC-21.A6.4.9
Dron', Mykola	CA	IAC-21.E1.3.11
Dron', Mykola	CA	IAC-21.C4.4.11
Drudi, Lisa	A	IAC-21.B1.IP.8
Du, Wenyan	A	IAC-21.B5.1.7
Du, Wenyan	A	IAC-21.B5.3.6
Du, Xiangguang	CA	IAC-21.D2.2.7
Du Plessis, Stefan S	CA	IAC-21.E2.2.8
DUBANCHET, Vincent	A	IAC-21.D3.2B.10
Dubreuil, Sylvain	CA	IAC-21.D2.4.6
Duchemin, Olivier	CA	IAC-21.C4.5.5
Duger, Ulam-Orgikh	CA	IAC-21.B4.1.6
Duggan, Matthew	A	IAC-21.B3.3.5
Duggan, Matthew	CA	IAC-21.B3.8.5
Duggan, Matthew	A	IAC-21.B3.8.12
Duly, Adrian	CA	IAC-21.C4.3.9
Dumas, Pedro	CA	IAC-21.E2.3-GTS.4.16
Dumont, Etienne	CA	IAC-21.D2.6.1
Dunbar, Bonnie J	CA	IAC-21.E1.3.12
Dunham, David	A	IAC-21.E4.2.11
Duran, Cristina	CA	IAC-21.A6.3.7
Durante, Daniele	CA	IAC-21.B2.6.2
Durante, Daniele	CA	IAC-21.B4.9-GTS.5.1
Durgule, Manali	CA	IAC-21.E2.3-GTS.4.11
Durner, Maximilian	CA	IAC-21.A3.2A.3
Dutheil, Jean-Philippe	CA	IAC-21.D2.4.10
Dutta, Shrouti	A	IAC-21.A6.7.2
Duvet, Ludovic	A	IAC-21.A3.2A.9
Duvet, Ludovic	CA	IAC-21.A3.2A.10
Duvet, Ludovic	CA	IAC-21.B2.6.5
Duzzi, Matteo	A	IAC-21.C4.5.9
Duzzi, Matteo	CA	IAC-21.B4.6A.10
Dvořák, Ondřej	CA	IAC-21.D2.3.4
Dwa, Manisha	A	IAC-21.E1.1.6
Dwa, Manisha	CA	IAC-21.E1.5.8
Dyanatkar Motaghed, Sepand	CA	IAC-21.E1.5.6
Diéz, Mónica	CA	IAC-21.B6.2.9
Döberl, Egon	CA	IAC-21.A6.6.2
Dąbrowski, Adam	A	IAC-21.C2.3.10
Dąbrowski, Adam	CA	IAC-21.E1.5.10
Dąbrowski, Adam	CA	IAC-21.A2.IP.2
Dąbrowski, Adam	A	IAC-21.C2.7.11
Dąbrowski, Adam	A	IAC-21.B4.6B.7
Dąbrowski, Adam	A	IAC-21.E8.1.1
D'Alessandro, Simone	CA	IAC-21.C4.3.5
D'Ambrogio, Andrea	CA	IAC-21.D1.4A.8

E

Eachempati, Prashanti	CA	IAC-21.E5.3.7
Echeverri, Juan José	CA	IAC-21.B4.IP.15
Echsel, Markus	CA	IAC-21.D1.3.1
Echsel, Markus	CA	IAC-21.C2.5.8
Ecker, Tobias	CA	IAC-21.D2.6.1
Eddowes, Daniel	CA	IAC-21.B2.3.3
Eddy, Jerry	CA	IAC-21.C3.1.3
Eddy, Jerry	A	IAC-21.D4.3.4
Edwards, Brooke	CA	IAC-21.A5.1.12
Edwards, Christine	A	IAC-21.A5.1.1
Edwards, Christopher	CA	IAC-21.A3.3A.1
Edwards, Christopher	CA	IAC-21.A3.3B.1
Edwards, Christopher	CA	IAC-21.A3.IP.63
Edwards, Tamsyn	CA	IAC-21.B3.4-B6.4.12
Ehreisner, Anouk	CA	IAC-21.A3.2B.6
Ehresmann, Manfred	CA	IAC-21.D1.3.1
Ehresmann, Manfred	A	IAC-21.D1.4A.3

Name	Role	Paper
Ehresmann, Manfred	CA	IAC-21.B4.IP.13
Ehresmann, Manfred	CA	IAC-21.A2.5.8
Eichel, Silas	CA	IAC-21.D2.6.1
Eigelsreiter, Gerhard	CA	IAC-21.B2.5.7
Ekal, Monica	CA	IAC-21.A3.2B.17
Eklund, Anders	CA	IAC-21.A3.2C.17
El Hariry, Matteo	CA	IAC-21.B4.8.4
El-Dali, Wael	CA	IAC-21.B2.6.5
El-Megharbel, Hoda Awny	CA	IAC-21.B4.3.3
El-Shawa, Sahba	A	IAC-21.D4.2.7
El-Shawa, Sahba	A	IAC-21.E3.4.4
Elakov, Aleksandr	CA	IAC-21.C4.6.8
Elavarasan, Elakya	CA	IAC-21.A1.7.6
Elavarasan, Ilankuzhali	A	IAC-21.A1.5.7
Elavarasan, Ilankuzhali	CA	IAC-21.A1.IP.21
Elavarasan, Ilankuzhali	A	IAC-21.A1.7.6
ELEUTERI, MASSIMO	CA	IAC-21.A3.IP.12
Elfvelin, Martin	CA	IAC-21.B4.2.9
Elfvelin, Martin	A	IAC-21.B4.3.5
Elhoushy, Samer	CA	IAC-21.E2.4.16
Elhoushy, Samer	A	IAC-21.C3.IP.7
Elkabbany, Marwa	A	IAC-21.B5.1.2
Elkabbany, Marwa	A	IAC-21.B5.2.8
Elliot, Ellis	CA	IAC-21.A3.2A.8
Elliott, John	CA	IAC-21.A4.2.2
Ellis, Claire	CA	IAC-21.A1.3.12
Ellwood, John	CA	IAC-21.D1.1.7
Elmaarry, Mohamed Ramy	A	IAC-21.A7.3.2
ELMAHDY, Samy	A	IAC-21.B5.1.6
ELMAHDY, Samy	A	IAC-21.B5.2.17
ELMAHDY, Samy	A	IAC-21.B1.4.3
Elmegharbel, Hoda	CA	IAC-21.B4.2.3
Elmegharbel, Hoda	A	IAC-21.A3.IP.37
Elmegharbel, Hoda	CA	IAC-21.E6.1.7
Elmoselhi, Adel	CA	IAC-21.A1.8.8
Els, Sebastian	CA	IAC-21.A3.2A.7
Els, Sebastian	A	IAC-21.A3.2A.14
Els, Sebastian	CA	IAC-21.A3.IP.15
Els, Sebastian	A	IAC-21.A3.IP.30
Els, Sebastian	CA	IAC-21.A3.IP.39
Els, Sebastian	A	IAC-21.A3.2C.8
Els, Sebastian	A	IAC-21.A3.2C.17
Elsayed, Hamdy	A	IAC-21.D1.1.4
Elsner, Lisa	CA	IAC-21.C1.8.2
Elson, Andy	CA	IAC-21.E3.4.2
Elsperman, Michael	CA	IAC-21.B3.8.12
Elsäßer, Henning	CA	IAC-21.D2.6.2
Emparala, Namratha	CA	IAC-21.E1.9.5
Encarnacao, Joao	CA	IAC-21.B4.7.2
Endsley, Tristan	CA	IAC-21.A1.2.4
Enell, Carl-Fredrik	CA	IAC-21.B4.3.5
England, Scott	CA	IAC-21.A3.3B.1
England, Scott	CA	IAC-21.A3.IP.1
Engle, James	CA	IAC-21.B3.8.5
Enkhbayar, Badamgarav	CA	IAC-21.B4.1.6
Ennis, Stephen	A	IAC-21.B3.5.3
Ennis, Stephen	CA	IAC-21.B3.6-A5.3.1
Ennis, Stephen	CA	IAC-21.B3.7.1
Erdenebat, Usukhbayar	CA	IAC-21.B4.1.6
Eremchenko, Eugene	CA	IAC-21.B1.1.5
Eremenko, Alexander	CA	IAC-21.A3.3A.5
Ernce, Alexa	CA	IAC-21.C2.6.3
Ertl, Moritz	CA	IAC-21.D2.6.1
Escalante, Alfredo	A	IAC-21.D1.3.2
Escalona, Alexa	CA	IAC-21.A5.2.8
Escobar Antón, Diego	CA	IAC-21.A6.9.1
España, Fredy	CA	IAC-21.E1.7.5
Espinosa, Erick	CA	IAC-21.D1.4B.7
Espinosa Rondon, Juan	CA	IAC-21.B4.IP.15
Espinoza Gastelum, Guadalupe	A	IAC-21.E5.2.4
Espinoza Gastelum, Guadalupe	CA	IAC-21.E1.IP.8
Espinoza Gastelum, Guadalupe	A	IAC-21.E5.4.8
Esposito, Tom	CA	IAC-21.E1.8.5
Esser, Burkard	CA	IAC-21.D2.3.1
Esteves, Ana Margarida	CA	IAC-21.E5.1.1

Name	Role	Paper
Esteves, David	CA	IAC-21.B4.7.2
Esty, Clark	CA	IAC-21.A5.1.5
Ettahri, Mohamed Amine	A	IAC-21.E8.1.2
Eugeni, Marco	CA	IAC-21.B5.2.3
Eugeni, Marco	A	IAC-21.C2.5.5
Eugeni, Marco	A	IAC-21.C2.7.5
Eugeni, Marco	CA	IAC-21.D4.5.1
Eugeni, Marco	A	IAC-21.C2.9.9
Eun, Youngho	CA	IAC-21.C4.6.5
Evagora, Anthony	CA	IAC-21.A3.2A.11
Everett, David	CA	IAC-21.D1.5.2
Eves, Stuart	CA	IAC-21.A6.1.10
Ewald, Reinhold	CA	IAC-21.E5.IP.6
Ezenagu, Alexander	A	IAC-21.E3.2.13

F

Faber, Daniel	CA	IAC-21.B4.6A.9
Faber, Daniel	CA	IAC-21.C4.9.7
Facchinetti, Claudia	CA	IAC-21.A6.9.6
Facchinetti, Claudia	CA	IAC-21.A6.IP.21
Facchini, Luca	CA	IAC-21.A6.9.11
Faggioli, Guglielmo	CA	IAC-21.B5.1.5
Faggioli, Guglielmo	A	IAC-21.B5.1.14
Fajardo Soria, George Steve	A	IAC-21.E1.3.13
Falcão, António	CA	IAC-21.B1.4.6
Faldu, Bhavin	CA	IAC-21.B1.4.4
Fan, Shaoyan	A	IAC-21.E2.4.6
Fang, Qingyun	A	IAC-21.B4.6A.5
Fang, Qun	CA	IAC-21.A3.IP.9
Fang, Qun	CA	IAC-21.A6.10-B6.5.2
Fanka, Alongkot	CA	IAC-21.A3.IP.19
Fantino, Elena	CA	IAC-21.C1.4.2
Fantino, Elena	CA	IAC-21.C1.5.6
Faragalli, Michele	CA	IAC-21.A3.2B.8
Farah, Wael	A	IAC-21.A4.1.11
Farid, Ahmed	CA	IAC-21.A3.IP.37
Farissi, Mohamed Salim	A	IAC-21.A6.IP.21
Faroukh, Yousuf	CA	IAC-21.B4.2.2
Faroukh, Yousuf	CA	IAC-21.C1.9.7
Farrant, Benjamin	CA	IAC-21.A3.IP.43
Farsad, Nariman	CA	IAC-21.D3.IP.8
Fari, Stefano	A	IAC-21.A3.2B.3
Fari, Stefano	A	IAC-21.D2.3.2
Fasano, Giancarmine	CA	IAC-21.C1.1.6
Fasano, Giancarmine	CA	IAC-21.A6.9.8
Fasano, Luca	CA	IAC-21.B1.5.12
Fatima, Rida	A	IAC-21.A1.5.6
Fatoyinbo, Temilola	CA	IAC-21.E1.5.7
Fau, Guillaume	CA	IAC-21.A3.2A.11
Faure, Pauline	CA	IAC-21.C2.2.6
Faure, Pauline	A	IAC-21.B4.6B.11
Fauzi, Ahmad	CA	IAC-21.C3.3.2
FAVIER, JEAN	CA	IAC-21.D3.2A.5
Favotto, Federico	CA	IAC-21.D1.3.4
Fazeli, Elnaz	CA	IAC-21.A2.6.2
Feasson, Marcellin	CA	IAC-21.A3.2C.12
Fedele, Alberto	CA	IAC-21.C2.4.3
Federici, Lorenzo	A	IAC-21.C1.4.7
Federico, Giulia	CA	IAC-21.E1.6.1
Fedoseev, Aleksey	A	IAC-21.D4.1.12
Fedyayev, Konstantin	CA	IAC-21.C1.5.4
Felcini, Enrico	CA	IAC-21.A3.1.11
Felderhoff, Heiko	CA	IAC-21.D2.2.5
Felicetti, Leonard	CA	IAC-21.C1.5.7
Felicetti, Leonard	CA	IAC-21.B4.7.3
Fendler, Yoann	CA	IAC-21.C4.6.6
Feng, Jianjun	A	IAC-21.D3.3.9
Feoli, Enrico	CA	IAC-21.D4.1.15
Fereres Rapoport, Sonia	CA	IAC-21.A3.2C.18
Fernandez, Valerie	CA	IAC-21.B1.2.8
Fernandez, William	A	IAC-21.B3.4-B6.4.2
Fernandez-Gonzalez, Rodrigo	CA	IAC-21.A1.8.9
Fernandez-Gonzalez, Rodrigo	CA	IAC-21.A2.7.3
Fernini, Ilias	CA	IAC-21.A6.1.8

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Name	Role	Paper
Fernini, Ilias	CA	IAC-21.B4.2.2
Fernini, Ilias	CA	IAC-21.E2.1.9
Fernini, Ilias	A	IAC-21.E1.2.9
Fernini, Ilias	A	IAC-21.E1.3.7
Fernini, Ilias	CA	IAC-21.A3.3A.2
Fernini, Ilias	A	IAC-21.A7.2.6
Fernini, Ilias	CA	IAC-21.A7.2.7
Fernini, Ilias	CA	IAC-21.A7.2.8
Fernini, Ilias	CA	IAC-21.A7.2.9
Fernini, Ilias	A	IAC-21.E1.5.1
Fernini, Ilias	CA	IAC-21.B2.6.11
Fernini, Ilias	CA	IAC-21.C1.9.7
Fernández Bravo, Elena	A	IAC-21.C2.3.1
Fernández Bravo, Elena	CA	IAC-21.A2.5.5
Ferra, Lionel	CA	IAC-21.B3.5.3
Ferra, Lionel	CA	IAC-21.B3.5.7
Ferra, Lionel	CA	IAC-21.B3.6-A5.3.1
Ferra, Lionel	CA	IAC-21.B3.7.1
Ferrabue, Sofia	CA	IAC-21.E1.5.11
Ferracina, Luca	CA	IAC-21.C2.4.3
Ferranti, Francesca	CA	IAC-21.E1.2.5
Ferrara, Miriam	CA	IAC-21.B3.7.7
Ferrari, Fabio	CA	IAC-21.D4.1.1
Ferrato, Eugenio	CA	IAC-21.C4.5.7
Ferrato, Eugenio	CA	IAC-21.C4.5.12
Ferreira, Jose Pedro	A	IAC-21.E6.3.8
Ferreira, Maria	CA	IAC-21.E6.3.8
Ferreira, Maurício Gonçalves Vieira	CA	IAC-21.B6.1.10
Ferreira, Yasmin	CA	IAC-21.E2.4.9
Ferrer, Estel	CA	IAC-21.E2.3-GTS.4.10
Ferrer, Josep	CA	IAC-21.B2.1.1
Ferrer, Josep	CA	IAC-21.B4.7.1
Ferri, Antonella	A	IAC-21.A3.3B.6
Ferrier, Pierrick	A	IAC-21.B1.6.7
Ferrington, Nicolas	CA	IAC-21.A3.3A.1
Ferrán Cifuentes, Alvaro	CA	IAC-21.D1.6.2
Ferrús, Ramon	CA	IAC-21.B2.1.1
Ferrús, Ramon	CA	IAC-21.B4.7.1
Feruglio, Lorenzo	CA	IAC-21.B5.1.5
Feruglio, Lorenzo	CA	IAC-21.D1.1.8
Feruglio, Lorenzo	CA	IAC-21.B6.2.4
Fiamanya, Edem	CA	IAC-21.B2.4.5
Fiedler, Hauke	CA	IAC-21.A6.1.6
Fiedler, Hauke	A	IAC-21.A6.9.4
Fiedler, Hauke	CA	IAC-21.C1.6.6
Fikri, Mira	A	IAC-21.E2.1.9
Filatyeve, Alexander S.	CA	IAC-21.C4.6.9
Filatyeve, Alexander S.	CA	IAC-21.C4.9.1
Filgas, Robert	A	IAC-21.A3.2B.15
Filippetto, Daniele	CA	IAC-21.D3.2A.2
Filippi, Elisa	CA	IAC-21.E1.2.7
Fillingim, Mathew	CA	IAC-21.A3.3B.1
Fillingim, Mathew	CA	IAC-21.A3.IP.1
Fillol, Florian	A	IAC-21.E2.3-GTS.4.12
Fillol, Florian	CA	IAC-21.D3.2B.9
Filotico, Carla	CA	IAC-21.E3.4.2
Fino, Ivan	CA	IAC-21.E7.5.4
Fino, Ivan	A	IAC-21.E7.7.8
Fiore, Fabrizio	CA	IAC-21.B4.7.13
Fiore, Fabrizio	CA	IAC-21.B4.7.14
Fiore, Stéphanie	A	IAC-21.B4.2.6
Fischer, Beate	CA	IAC-21.B3.5.3
Fischer, Beate	CA	IAC-21.B3.6-A5.3.1
Fischer, Jason	CA	IAC-21.A5.1.12
Fischer, Jonas	CA	IAC-21.D1.3.1
Fischer-Gundlach, Moritz	CA	IAC-21.A3.2A.3
Fisher, Charles	CA	IAC-21.A3.3B.1
Fisher, Charles	CA	IAC-21.A3.IP.29
Fishman, Chloe	CA	IAC-21.A5.2.13
Fitrianingsih, Ery	CA	IAC-21.C2.1.3
Fitrianingsih, Ery	CA	IAC-21.D5.1.2
Fitrianingsih, Ery	CA	IAC-21.C3.3.2
Fitrianingsih, Ery	CA	IAC-21.C3.3.6
Fitzgerald, Michael	CA	IAC-21.D4.3.2
Fitzgerald, Michael	CA	IAC-21.D4.3.3

Name	Role	Paper
Fitzsimmons, Alan	CA	IAC-21.A3.4B.2
Fix, Sebastian	CA	IAC-21.D4.1.6
Flahaut, Jessica	A	IAC-21.A3.2A.7
Flahaut, Jessica	CA	IAC-21.A3.IP.13
Flahaut, Jessica	CA	IAC-21.A3.IP.39
Flahaut, Jessica	CA	IAC-21.A3.IP.60
Flahaut, Jessica	CA	IAC-21.A3.IP.62
Fleischer, Jennifer	A	IAC-21.A1.3.12
Fliege, Jörg	CA	IAC-21.A5.4-D2.8.1
Flohrrer, Tim	CA	IAC-21.A6.6.2
Flohrrer, Tim	CA	IAC-21.A6.10-B6.5.4
Flores, Juan	CA	IAC-21.A3.2C.15
Flores, Pamela	A	IAC-21.A2.7.2
Flores, Roberto	CA	IAC-21.C1.4.2
Flores, Roberto	CA	IAC-21.C1.5.6
Flores Ayuso, Diana Pamela	CA	IAC-21.A2.7.1
Florez, David	CA	IAC-21.B4.IP.15
Florin, Gunnar	CA	IAC-21.A2.3.7
Florin, Marie-Valentine	CA	IAC-21.A6.8-E9.1.5
Floyd, Shannon	CA	IAC-21.A2.7.2
Fodde, Iosto	A	IAC-21.C1.7.1
Foerster, Kyra	CA	IAC-21.D1.3.7
Fogtman, Anna	CA	IAC-21.A1.3.3
Foing, Bernard	CA	IAC-21.A3.1.2
Foing, Bernard	CA	IAC-21.A3.1.3
Foing, Bernard	CA	IAC-21.D4.1.15
Foing, Bernard	CA	IAC-21.A3.2A.3
Foing, Bernard	A	IAC-21.A3.2B.6
Foing, Bernard	CA	IAC-21.E2.3-GTS.4.14
Foing, Bernard	CA	IAC-21.E3.2.14
Foing, Bernard	CA	IAC-21.D3.1.11
Foing, Bernard	CA	IAC-21.A5.2.13
Foing, Bernard	CA	IAC-21.E5.3.8
Foing, Bernard	CA	IAC-21.A3.IP.14
Foing, Bernard	CA	IAC-21.A3.IP.32
Foing, Bernard	CA	IAC-21.A3.2C.15
Foing, Bernard	CA	IAC-21.A3.2C.16
Foing, Bernard	CA	IAC-21.E1.9.15
Foing, Victoria	CA	IAC-21.A3.2B.6
Folcik, Zachary	CA	IAC-21.C1.4.8
Folta, David C.	CA	IAC-21.E4.2.11
Fomina, Elena	CA	IAC-21.A1.1.2
Fomina, Elena	CA	IAC-21.A1.1.3
Fomina, Elena	A	IAC-21.A1.2.10
Fonseca Prince, Andre	A	IAC-21.A3.1.7
Fonseca Prince, Andre	CA	IAC-21.A3.2A.3
Fontan Villacampa, Alejandro	CA	IAC-21.A3.2A.3
Fonteyne, Romain	CA	IAC-21.A5.1.10
Fonteyne, Romain	CA	IAC-21.D3.1.4
Fonteyne, Romain	A	IAC-21.A3.2C.6
Fornies Rodriguez, Susana	A	IAC-21.E6.2.7
Forshaw, Jason	CA	IAC-21.A6.4.10
Forshaw, Jason	A	IAC-21.A6.6.3
Forshaw, Jason	CA	IAC-21.A6.7.4
Forshaw, Jason	A	IAC-21.A6.10-B6.5.1
Fortin, Clement	CA	IAC-21.D1.4A.10
Fortunato, Antonio	CA	IAC-21.B3.IP.1
Fortunato, Vito	CA	IAC-21.D1.1.8
Foss, Edvard	A	IAC-21.E1.7.1
Fossati, Marco	CA	IAC-21.A6.2.9
Fossà, Alberto	CA	IAC-21.C1.4.9
Foster, Noah	CA	IAC-21.D5.1.8
Fotia, Roberto	CA	IAC-21.E3.3.4
Fragner, Heinrich	CA	IAC-21.B2.3.6
Fraile, Silvia	CA	IAC-21.B6.2.9
Francesconi, Alessandro	CA	IAC-21.C1.1.6
Francesconi, Alessandro	CA	IAC-21.B2.2.11
Francesconi, Alessandro	CA	IAC-21.D1.3.4
Francesconi, Alessandro	CA	IAC-21.E2.3-GTS.4.7
Francesconi, Alessandro	CA	IAC-21.A6.3.6
Francesconi, Alessandro	CA	IAC-21.A6.3.7
Francesconi, Alessandro	CA	IAC-21.B4.6A.11
Francesconi, Alessandro	CA	IAC-21.B4.7.1
Franzese, Vittorio	CA	IAC-21.B4.2.12
Franzese, Vittorio	CA	IAC-21.C1.1.13

Name	Role	Paper
Franzese, Vittorio	CA	IAC-21.D4.1.1
Franzese, Vittorio	CA	IAC-21.A3.2A.5
Frayling, Alyssa	A	IAC-21.E3.6.6
Freddi, Riccardo	CA	IAC-21.B5.1.3
Frederick, Jr., Robert A.	CA	IAC-21.C4.10-C3.5.11
Frei, Heike	CA	IAC-21.C1.1.4
Freimann, Andreas	CA	IAC-21.D1.4B.8
Freitas, José	CA	IAC-21.A6.7.7
Fresneda, Alfonso	CA	IAC-21.D5.2.5
Frey, Stefan	CA	IAC-21.A6.2.6
Freyssinet, Léonard	CA	IAC-21.A3.2C.12
Frezza, Lorenzo	CA	IAC-21.B4.1.9
Frezza, Lorenzo	CA	IAC-21.B4.3.11
Frezza, Lorenzo	CA	IAC-21.A6.10-B6.5.9
Frezza, Lorenzo	CA	IAC-21.B2.7.8
Fried, Adrian	A	IAC-21.C1.9.8
Fried, Irit	A	IAC-21.E1.IP.11
Friedl-Vallon, Felix	CA	IAC-21.A7.1.5
Friedlander, Lonia Rachael	CA	IAC-21.E1.2.3
Friedrich, Lion	CA	IAC-21.D1.3.1
Friend, Jonathan	CA	IAC-21.D3.2A.8
Friis-Liby, Linn	CA	IAC-21.B4.2.9
Frischauf, Norbert	CA	IAC-21.A3.1.11
Fritsch, Dieter	CA	IAC-21.B6.IP.2
Fritsch, Dieter	CA	IAC-21.A6.10-B6.5.8
Fritz Fidel Rocco, José A.	CA	IAC-21.C4.3.7
Fritz Fidel Rocco, José A.	CA	IAC-21.C4.2.9
Fritz Fidel Rocco, José A.	CA	IAC-21.C4.4.9
Froebel, Ludger	CA	IAC-21.D2.4.4
Frohmann, Sven	CA	IAC-21.A3.1.7
Frohmann, Sven	CA	IAC-21.A3.2A.3
Froeh, Carolin	CA	IAC-21.A6.1.6
Fruth, Thomas	CA	IAC-21.B6.1.8
Fu, Xiaodong	CA	IAC-21.C2.3.5
Fu, Xiaodong	CA	IAC-21.A6.IP.1
Fu, Xiaodong	A	IAC-21.D1.IP.7
Fuentes Soria, Carmen	CA	IAC-21.B4.2.9
Fuglesang, Christer	A	IAC-21.D4.1.4
Fugmann, Martin	CA	IAC-21.D1.3.1
Fujii, Atsushi	CA	IAC-21.A3.4A.2
Fujii, Gene	CA	IAC-21.A6.10-B6.5.1
Fujita, Ayaka	A	IAC-21.C2.1.9
FUJITA, Kazuhisa	CA	IAC-21.A2.4.4
Fujita, Masahiro	A	IAC-21.A7.3.6
Fujita, Masahiro	CA	IAC-21.B2.5.10
Fujita, Shinya	CA	IAC-21.B4.3.7
Fujita, Susumu	CA	IAC-21.B2.4.14
Fujiwara, Satoshi	CA	IAC-21.D2.3.11
Fuller, Sean	A	IAC-21.A3.2B.13
Fultz, Howard	CA	IAC-21.A1.3.6
Furfaro, Roberto	CA	IAC-21.C1.4.7
Furiato, Marco	CA	IAC-21.E2.3-GTS.4.7
Furlani, Luca	CA	IAC-21.A3.IP.38
Fursova, Anastasiia	A	IAC-21.A3.IP.56
Fusaro, Roberta	CA	IAC-21.C4.7.1
Fuse, Tetsuharu	CA	IAC-21.B2.2.2
Fuse, Tetsuharu	CA	IAC-21.B2.2.5
Förstner, Roger	CA	IAC-21.B4.7.6
Förstner, Roger	CA	IAC-21.B6.2.6
Förstner, Roger	CA	IAC-21.A3.4B.9
Füri, Evelyn	CA	IAC-21.A3.2A.7
Füri, Evelyn	CA	IAC-21.A3.IP.39

G

Gadge, Rohan	CA	IAC-21.E2.4.13
Gadot, Ilan	CA	IAC-21.A3.IP.60
Gaias, Gabriella Vittoria Maria	CA	IAC-21.A6.5.9
Gaidano, Matteo	CA	IAC-21.A5.3-B3.6.8
Gaisser, Steffen	CA	IAC-21.B4.4.2
Gajanan Satpute, Sumeet	CA	IAC-21.B4.7.3
Gajjar, Vishal	CA	IAC-21.A4.1.7
Gala, Jose	CA	IAC-21.D1.6.5
Galagan, Denis	CA	IAC-21.C2.1.8
Galarreta, Daniel	A	IAC-21.D5.2.7

Name	Role	Paper
Galeazzi, Claudio	CA	IAC-21.B1.2.8
Galla, Daniel	CA	IAC-21.D1.3.1
Gallego, Angel	A	IAC-21.A6.9.1
Galli, Dante	CA	IAC-21.D2.4.2
Galoforo, Germana	A	IAC-21.E1.2.5
Gambacciani, Giovanni	CA	IAC-21.D2.3.1
Gamble, Ben	CA	IAC-21.E1.9.12
Gamblin, Rachel B	CA	IAC-21.E1.3.12
Gamboa, Pedro	CA	IAC-21.C2.5.6
Ganatra, Devanshu	A	IAC-21.E7.5.4
Ganburged, Anar	CA	IAC-21.B4.1.6
Gancet, Jeremi	CA	IAC-21.D1.1.1
Gancet, Jeremi	A	IAC-21.A3.2A.11
Gancet, Jeremi	CA	IAC-21.B3.5.7
Gancet, Jeremi	CA	IAC-21.D1.6.2
Ganda, Willie	CA	IAC-21.B4.1.5
Gandía, Fernando	CA	IAC-21.A3.1.4
Gangestad, Joseph	A	IAC-21.A6.4.5
Gangtie, Zheng	CA	IAC-21.B4.6A.7
Ganssen, Gerald	CA	IAC-21.E5.2.7
Gantulga, Narantsatsral	CA	IAC-21.B4.1.6
Gany, Alon	CA	IAC-21.D2.7.10
Gao, Sherry	CA	IAC-21.A2.7.8
Gao, Sihong	CA	IAC-21.B6.IP.11
Gao, Yang	CA	IAC-21.A6.5.1
Gao, Yufeng	A	IAC-21.C1.IP.13
Gappmair, Wilfried	CA	IAC-21.B2.5.7
Garbagnati, Elisa	CA	IAC-21.E1.5.11
Garcia, Alan	CA	IAC-21.A3.2B.17
Garcia, Alfonso	CA	IAC-21.E2.3-GTS.4.10
Garcia, Ayon	CA	IAC-21.A3.2C.15
Garcia, Berta	CA	IAC-21.E2.3-GTS.4.10
Garcia, Hans	CA	IAC-21.B4.IP.15
Garcia, Manuel	CA	IAC-21.D1.2.6
Garcia de Herrerros, Maria	CA	IAC-21.D4.1.4
Garcia Gonzalez, Brenda	CA	IAC-21.E1.9.12
Garcia Perez, Jorge Alberto	A	IAC-21.A7.2.12
Garcia-Bonilla, Juan	A	IAC-21.C1.6.9
Garcia-Burgos, Axel	A	IAC-21.C1.4.8
Garcia-Burgos, Axel	A	IAC-21.A1.8.5
Garcia-Cuadrado, Gloria	CA	IAC-21.E1.3.14
Garcia-Souto, Jose A.	CA	IAC-21.E1.8.4
García González, Sergio	CA	IAC-21.A6.4.9
García Monclús, Silvia	CA	IAC-21.A2.3.8
García Yárnoz, Daniel	CA	IAC-21.A6.7.7
García-Cuevas, Sergio	CA	IAC-21.E5.2.6
Gardi, Alex	CA	IAC-21.D3.3.5
Gardi, Roberto	CA	IAC-21.C2.4.3
Gardill, Markus	CA	IAC-21.B4.3.12
Gardill, Markus	CA	IAC-21.B2.4.4
Gardill, Markus	CA	IAC-21.B2.5.6
Gareev, Linar	A	IAC-21.A2.4.8
Garegnani, Marco	CA	IAC-21.A3.IP.38
Garg, Prateek	CA	IAC-21.A3.IP.30
Garg, Prateek	CA	IAC-21.C2.7.12
Gargari, Matteo	CA	IAC-21.A3.IP.38
Garofalo, Riccardo	CA	IAC-21.B2.7.8
Garrett, Bailey	CA	IAC-21.B4.6B.11
Garzaniti, Nicola	CA	IAC-21.D4.1.12
Gasbarri, Paolo	CA	IAC-21.C2.2.4
Gasbarri, Paolo	CA	IAC-21.C2.3.4
Gasbarri, Paolo	CA	IAC-21.C2.3.7
Gasbarri, Paolo	CA	IAC-21.C2.9.2
Gasnault, Olivier	CA	IAC-21.A3.3B.2
Gass, Volker	CA	IAC-21.E1.1.7
Gass, Volker	CA	IAC-21.A3.2B.12
Gateau, Thibault	CA	IAC-21.E1.8.4
Gatens, Robyn	A	IAC-21.B3.3.1
Gatens, Robyn	CA	IAC-21.B3.3.2
Gates, Darrin	CA	IAC-21.D3.3.6
Gatti, Federico	CA	IAC-21.C4.3.9
Gaubert, François	CA	IAC-21.A2.6.2
Gaudenzi, Paolo	CA	IAC-21.B5.2.3
Gaudenzi, Paolo	CA	IAC-21.C2.5.5
Gaudenzi, Paolo	CA	IAC-21.C2.7.5

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Name	Role	Paper
Gaudenzi, Paolo	CA	IAC-21.D4.5.1
Gaudenzi, Paolo	CA	IAC-21.C2.9.9
Gaudin, Emilien	CA	IAC-21.A3.3A.8
Gaudin, Grégory	CA	IAC-21.D3.2B.10
Gaudino, Marvin	CA	IAC-21.A1.1.1
Gausepohl, Arne	CA	IAC-21.D2.2.5
Gaza, Ramona	CA	IAC-21.A1.5.4
Ge, Dantong	CA	IAC-21.C1.2.6
Ge, Dantong	A	IAC-21.B2.7.6
Gebhardt, Claus	A	IAC-21.E1.4.4
Geelen, Kelly	A	IAC-21.A3.3A.4
Geiger, Alain	CA	IAC-21.B1.4.12
Geiman, Connor	A	IAC-21.C4.9.7
Geiss, Markus	CA	IAC-21.C2.2.6
Geiss, Markus	CA	IAC-21.B4.IP.10
Gelain, Riccardo	CA	IAC-21.D2.3.12
Gelhaus, Johannes	CA	IAC-21.A6.7.7
Gema, Kevin	A	IAC-21.B1.3.9
General, Marco	CA	IAC-21.B3.7.2
Genevieve, Kate	A	IAC-21.A4.2.2
Genova, Antonio	A	IAC-21.A3.5.6
Genova, Antonio	CA	IAC-21.B4.8.9
Genovese, Angelo	CA	IAC-21.C3.IP.4
Gentgen, Chloe	A	IAC-21.C4.IP.7
Gentles, David	CA	IAC-21.A6.4.10
Gerdes, Levin	CA	IAC-21.D1.1.1
Gerger, Joachim	CA	IAC-21.C4.6.13
Ghatole, Priyanka	CA	IAC-21.B1.3.6
Ghazanfarinia, Sajjad	A	IAC-21.E2.4.15
Ghazanfarinia, Sajjad	A	IAC-21.E1.6.7
Ghazanfarinia, Sajjad	A	IAC-21.E1.IP.12
Ghelfi, Marco	CA	IAC-21.E2.4.9
Ghigino, Pablo	CA	IAC-21.D1.3.2
Ghignoni, Pietro	CA	IAC-21.C1.1.6
Ghiotto, Anthony	CA	IAC-21.E1.8.4
Ghiste, Stephane	CA	IAC-21.B3.7.1
Ghosh, Debodoot	A	IAC-21.C4.7.2
Ghotbi, Bahareh	CA	IAC-21.A3.3A.5
Giacomelli, Jasmine	A	IAC-21.C2.4.8
Giacomuzzo, Cinzia	CA	IAC-21.A6.3.6
Giacomuzzo, Cinzia	CA	IAC-21.A6.3.7
Giagkozoglou, Sofia	CA	IAC-21.D2.6.1
Giambusso, Matthew	CA	IAC-21.A3.4B.6
Gianfermo, Andrea	CA	IAC-21.B4.3.11
Gianfermo, Andrea	CA	IAC-21.A6.10-B6.5.9
Gianfermo, Andrea	CA	IAC-21.B2.7.8
Gianinetto, Marco	CA	IAC-21.E1.2.7
Giannetti, Vittorio	CA	IAC-21.C4.5.7
Giannetti, Vittorio	CA	IAC-21.C4.5.12
Giannetti, Vittorio	CA	IAC-21.B4.6A.12
Giannopapa, Christina	A	IAC-21.B4.1.8
Giannopapa, Christina	A	IAC-21.D5.2.8
Giannopapa, Christina	A	IAC-21.E7.3.5
Giannopapa, Christina	A	IAC-21.E6.3.2
Giannopapa, Christina	A	IAC-21.E9.1-A6.8.12
Gianousopoulos, Dimitri	CA	IAC-21.D5.1.8
Gibbons, Erin	CA	IAC-21.E7.1.8
Gierse, Andreas	CA	IAC-21.A2.5.1
Gil, Paulo J.S.	A	IAC-21.A5.2.12
Gil, Paulo J.S.	CA	IAC-21.C4.9.10
Gilardi-Velazquez, Hector	CA	IAC-21.D1.4B.7
Gilbert, Chris	CA	IAC-21.A3.2A.16
Giles, Daniel	A	IAC-21.A4.1.10
GILKAR, ASHFAQ	A	IAC-21.A1.3.5
Gilman, Nathaniel	CA	IAC-21.B4.6B.11
Gimadiev, Rinat	CA	IAC-21.A1.2.8
Giordana, Gabriele	CA	IAC-21.B6.2.4
Giordano, Carmine	CA	IAC-21.B4.2.12
Giordano, Carmine	CA	IAC-21.D4.1.1
Giordano, Carmine	CA	IAC-21.A3.2A.5
Giordano, Pietro	A	IAC-21.B2.6.5
Giordano, Pietro	A	IAC-21.B2.7.2
Giorgio, Vincenzo	CA	IAC-21.A3.3A.3
Girgenrath, Michaela	CA	IAC-21.B3.3.2
Giridharan, Nithyaashree	CA	IAC-21.A5.1.11

Name	Role	Paper
Giridharan, Nithyaashree	A	IAC-21.B2.6.12
Girschik, Adrian	CA	IAC-21.B3.9-GTS.2.3
Giubilato, Riccardo	CA	IAC-21.A3.2A.3
Giubilato, Riccardo	CA	IAC-21.A5.3-B3.6.5
Giudici, Lorenzo	CA	IAC-21.A6.3.7
Giudici, Lorenzo	CA	IAC-21.A6.2.6
Giudici, Lorenzo	A	IAC-21.C1.7.8
Giuliani, Roberto	CA	IAC-21.E6.1.11
Giuliani, Valerio	A	IAC-21.C3.4.8
Glaser, Christopher	CA	IAC-21.D2.3.12
Glaser, Thilo	CA	IAC-21.D2.6.1
Gleason, Micheal	CA	IAC-21.E5.4.1
Glover, Tim	CA	IAC-21.A3.4B.6
Glukhikh, Dmitrii	CA	IAC-21.B3.9-GTS.2.7
Glukhikh, Dmitrii	CA	IAC-21.B3.9-GTS.2.8
Glukhova, Elizaveta	CA	IAC-21.A3.2B.6
Glukhova, Elizaveta	CA	IAC-21.E1.9.15
Go, Ji Seong	CA	IAC-21.C2.2.11
GOBERT, Thibaud	CA	IAC-21.D3.2A.5
Goczkowski, Jacek	CA	IAC-21.C2.3.10
Godard, Estelle	CA	IAC-21.E1.6.5
Godeanu, Adina	CA	IAC-21.A3.2B.17
Godinho, Michael	CA	IAC-21.B4.8.10
Goel, Harshit	CA	IAC-21.A3.3A.10
Goel, Harshit	CA	IAC-21.A3.5.1
Goester, Jean-Francois	CA	IAC-21.C1.4.9
Gogu, Cristina Maria	CA	IAC-21.B5.1.15
Goh, Lian Ming	CA	IAC-21.E3.2.11
Gokalp, Kaya	CA	IAC-21.B4.2.2
Gold, Arya	CA	IAC-21.B1.IP.12
Goldwyn, Daryl	CA	IAC-21.C4.IP.21
Golemis, Aris	CA	IAC-21.B4.2.9
Golemis, Aris	CA	IAC-21.B4.3.5
Golemis, Aris	A	IAC-21.B4.9-GTS.5.9
Golikov, Alexander	A	IAC-21.C4.9.1
Golkar, Alessandro	CA	IAC-21.D4.1.12
Golkar, Alessandro	CA	IAC-21.D1.2.5
Golkar, Alessandro	CA	IAC-21.D1.2.7
Gollins, Nick	CA	IAC-21.A3.2A.9
Gollins, Nick	CA	IAC-21.A3.2A.10
Golovin, Artyom	CA	IAC-21.B4.6B.10
Golubev, Yury	CA	IAC-21.C1.4.4
Golubev, Yury	CA	IAC-21.A3.5.4
Golubev, Yury	CA	IAC-21.B4.8.11
Gomez Otero, David	CA	IAC-21.B2.6.5
Gomez Rodriguez, Carolina	CA	IAC-21.E6.1.11
Gomez-Fernandez, David	CA	IAC-21.A5.1.10
Gomez-Fernandez, David	CA	IAC-21.A1.IP.20
Gomez-Fernandez, David	CA	IAC-21.E5.IP.6
Gondol, Norman	A	IAC-21.C4.5.4
Gonella, Marco	CA	IAC-21.A3.4B.4
Gontijo, Ivair	CA	IAC-21.A3.3B.2
Gontijo, Maurício	A	IAC-21.C4.4.3
Gontijo, Maurício	CA	IAC-21.C4.7.10
Gonzalez, Sergio Parra	CA	IAC-21.A6.1.5
Gonzalez del Amo, Jose	CA	IAC-21.C4.9.3
Gonzalez Fernandez, Alberto	CA	IAC-21.A3.2A.9
Gonzalez Machin, Hector	CA	IAC-21.E5.2.6
Gonzalez Muiño, Alberto	CA	IAC-21.B2.1.1
Gonzalez-Franquesa, Ferran	CA	IAC-21.C1.5.1
Gonzalez-Llorente, Jesus	CA	IAC-21.B4.IP.15
Gonzalo, Juan Luis	CA	IAC-21.A6.2.6
Gonzalo, Juan Luis	A	IAC-21.A6.10-B6.5.5
González Chávez, Daniela Fernanda	A	IAC-21.E1.2.2
González Chávez, Daniela Fernanda	CA	IAC-21.E1.3.6
González Chávez, Daniela Fernanda	CA	IAC-21.A2.2.8
González Chávez, Daniela Fernanda	CA	IAC-21.A2.2.10
González Chávez, Daniela Fernanda	CA	IAC-21.A5.3-B3.6.10
González Chávez, Daniela Fernanda	CA	IAC-21.A1.IP.13
González Chávez, Daniela Fernanda	CA	IAC-21.B4.IP.3
González Chávez, Daniela Fernanda	A	IAC-21.E5.IP.12
González Chávez, Daniela Fernanda	CA	IAC-21.E1.9.11
González-Llamazares, Laura	CA	IAC-21.E1.3.14
Gonçalves, Rene	A	IAC-21.C4.3.7
Gonçalves, Rene	A	IAC-21.C4.2.9

Name	Role	Paper
Gonçalves, Rene	A	IAC-21.C4.4.9
Goodliff, Kandyce	A	IAC-21.A5.1.5
Goodliff, Kandyce	CA	IAC-21.A5.1.18
Goossens, Sander	CA	IAC-21.A3.5.6
Gorbunova, Kristina	CA	IAC-21.E2.3-GTS.4.3
Gordeev, Svyatoslav	CA	IAC-21.C4.6.8
Gordienko, Kirill	CA	IAC-21.A1.2.8
Gordon, Robert	A	IAC-21.C1.8.12
Gore, Janhavi	CA	IAC-21.A6.IP.18
Gorgolewski, Aleksander	CA	IAC-21.B1.3.5
Gori, Leonella	CA	IAC-21.D4.5.1
Gori, Massimiliano	CA	IAC-21.E5.4.10
Gori, Oscar	CA	IAC-21.C4.7.1
Goriachev, Valerii	CA	IAC-21.A2.1.6
Gorissen, Jeffrey	CA	IAC-21.E2.3-GTS.4.13
Gorman, Alice	CA	IAC-21.E5.1.9
Gorti, Sridhar	CA	IAC-21.A2.7.2
gosikere Matadha, Sagar Sarvad	CA	IAC-21.C1.9.4
Goto, Aki	CA	IAC-21.C2.8.4
Gottschalk, Nicole	CA	IAC-21.D1.3.1
Gotzig, Ulrich	A	IAC-21.C4.2.14
Gouda, Loay	CA	IAC-21.E1.1.8
Gouda, Loay	CA	IAC-21.A3.IP.37
Gouda, Loay	CA	IAC-21.E6.1.7
Gouvêa, Leonardo	CA	IAC-21.C4.3.7
Gouvêa, Leonardo	CA	IAC-21.C4.2.9
Governale, Giuseppe	CA	IAC-21.D2.3.1
Govind Reddy, Gowtham Reddy	CA	IAC-21.E2.3-GTS.4.18
Govindaraj, Shashank	CA	IAC-21.D1.1.1
Govindaraj, Shashank	A	IAC-21.A3.2B.9
Goyal, Vinay	CA	IAC-21.D2.1.7
Graber, Thorsten	CA	IAC-21.A3.2A.3
Graber, Thorsten	CA	IAC-21.A3.2A.10
Gracia García-Lisbona, Juan	A	IAC-21.A2.5.10
Graff, Erik	CA	IAC-21.B4.2.9
Graham, Julie	CA	IAC-21.A6.1.2
Graham, Julie	CA	IAC-21.E2.4.2
Graham, Julie	A	IAC-21.A6.2.10
Graja, Adrianna	A	IAC-21.E2.3-GTS.4.1
Graja, Adrianna	A	IAC-21.A2.7.6
Grajeda, Genaro	CA	IAC-21.D4.2.5
Gramegna, Luca	CA	IAC-21.A1.5.11
Gramiccia, Luciano	CA	IAC-21.C2.4.3
Grand, Stéphanie	CA	IAC-21.A5.2.7
Grande, Davide	CA	IAC-21.D2.3.2
Grande, Manuel	CA	IAC-21.A3.1.2
Grande, Manuel	CA	IAC-21.D3.1.11
Grandsire, Jules	CA	IAC-21.E1.6.1
Grassi, Michele	CA	IAC-21.C1.1.6
Grassi, Michele	CA	IAC-21.C2.4.3
Grassi, Michele	CA	IAC-21.B4.7.10
Grasso, Marco	A	IAC-21.B4.7.10
Grattagliano, Paola	CA	IAC-21.A3.3A.7
Grau, Sebastian	CA	IAC-21.C1.9.8
Graux, Alessandra	CA	IAC-21.B2.7.8
Gravdahl, Jan Tommy	CA	IAC-21.C1.9.11
Gray, Tom	CA	IAC-21.D1.4A.8
Grazia Maria, Fiore	A	IAC-21.E5.3.4
Graziani, Filippo	A	IAC-21.A6.1.13
Graziani, Filippo	A	IAC-21.B4.3.2
Graziani, Filippo	A	IAC-21.E1.4.1
Graziani, Filippo	CA	IAC-21.B4.6A.10
Graziano, Maria Daniela	A	IAC-21.B1.5.13
Graziano, Maria Daniela	CA	IAC-21.B4.7.10
Graziano, Mariella	A	IAC-21.A3.1.4
Graziano, Mariella	CA	IAC-21.A3.4B.3
Greaves, Benjamin	CA	IAC-21.A5.2.8
Greaves, Benjamin	A	IAC-21.E1.9.12
Green, Adam	CA	IAC-21.A3.3B.7
Green, James	CA	IAC-21.B3.1.6
Green, Simon	CA	IAC-21.A3.4B.2
Greenwood-George, Emma	CA	IAC-21.E5.3.8
Greer, Michael	CA	IAC-21.E1.3.12
Greer, Presley	CA	IAC-21.E1.3.12
Gregori, Ludovico	CA	IAC-21.B4.9-GTS.5.5

Name	Role	Paper
Gregorio, Anna	CA	IAC-21.E3.3.4
Gregucci, Stefan	CA	IAC-21.B4.6A.12
Greisman Ran, Uri	A	IAC-21.B4.IP.22
Grenier, Antoine	CA	IAC-21.B2.6.5
Grenier, Antoine	CA	IAC-21.B2.7.2
Gres, Tania	CA	IAC-21.A3.1.9
Grethen-Bußmann, Antonia	CA	IAC-21.B4.2.9
Grethen-Bußmann, Antonia	A	IAC-21.C2.2.10
Grevers, Dorothée	A	IAC-21.A1.1.5
Griffin, Brand	A	IAC-21.B3.2.6
Griffin, Brand	A	IAC-21.E4.1.3
Griffin, Douglas	CA	IAC-21.B4.6B.5
Griffith, Nathan	A	IAC-21.A6.10-B6.5.3
Griffith, Ryan	CA	IAC-21.A1.3.6
Grifoni-Winters, Elena	CA	IAC-21.E8.1.3
Grigoriev, Valery	CA	IAC-21.C2.3.6
Grigoryan, Vadim	CA	IAC-21.E2.3-GTS.4.3
Grimm, Christian	CA	IAC-21.D2.6.1
Grishin, Alexey	CA	IAC-21.A1.2.10
Grishin, Alexey	CA	IAC-21.B3.8.10
Grishko, Dmitriy	CA	IAC-21.A3.IP.16
Griva, Iliana	A	IAC-21.E7.4.7
Grogan, Paul	CA	IAC-21.D1.4B.1
Grosner, Ian	CA	IAC-21.B6.1.10
Grosner, Ian	A	IAC-21.E7.5.10
Gross, Elke	A	IAC-21.B6.1.8
Grossberg, Maarja	CA	IAC-21.C3.4.7
Großhans, Jens	A	IAC-21.B4.6B.6
Grott, Matthias	CA	IAC-21.A3.4A.7
Gruber, Joram	CA	IAC-21.C2.2.6
Gruber, Joram	CA	IAC-21.B4.IP.10
Gruber, Samira	CA	IAC-21.C4.1.6
Gruneisen, Rachel	CA	IAC-21.A2.1.2
Gruntmann, Mike	CA	IAC-21.D4.4.1
Grunwald, Gerhard	CA	IAC-21.D1.1.1
Grunwald, Gerhard	CA	IAC-21.D3.2A.2
Grunwald, Gerhard	CA	IAC-21.D1.6.2
Grushevskii, Alexey	A	IAC-21.C1.4.4
Grushevskii, Alexey	A	IAC-21.A3.5.4
Grushevskii, Alexey	A	IAC-21.B4.8.11
Grusin, Mike	CA	IAC-21.A2.7.1
Grzymisch, Jonathan	CA	IAC-21.C1.8.1
Grøtthe, Marius Eivind	CA	IAC-21.C1.9.11
Gscheidle, Christian	CA	IAC-21.A3.2A.11
Gu, Zheng	A	IAC-21.D1.3.11
Gu, Zheng	CA	IAC-21.B4.IP.4
Guadagnini, Jacopo	CA	IAC-21.D2.4.6
Guadalupi, Marco	A	IAC-21.B2.1.1
Guadalupi, Marco	CA	IAC-21.B4.7.1
Guardabasso, Paolo	A	IAC-21.A6.4.6
Guardabasso, Paolo	CA	IAC-21.A5.1.10
Guardabasso, Paolo	CA	IAC-21.D3.1.4
Guedes da Silva, Vitor	CA	IAC-21.E1.2.10
Guegan, Kevin	CA	IAC-21.B1.IP.12
Guerinoni, Federico	CA	IAC-21.E1.5.11
Guerman, Anna	CA	IAC-21.B4.2.5
Guerman, Anna	CA	IAC-21.C1.1.12
Guerman, Anna	CA	IAC-21.E1.8.4
Guerra, Alessandro	CA	IAC-21.A3.4B.4
Guerra, Francesca	CA	IAC-21.A6.3.6
Guerra, Gonzalo	CA	IAC-21.D1.6.5
Gugliermetti, Luca	CA	IAC-21.A3.IP.38
Gugliermetti, Luca	CA	IAC-21.B4.9-GTS.5.5
Guidi, Rodolfo	CA	IAC-21.E5.4.10
Guidotti, Giuseppe	CA	IAC-21.D2.3.1
Guilbaud, Eric	CA	IAC-21.C4.6.6
Guillotin, Eloa	A	IAC-21.D2.7.8
Guilot, Alexis	CA	IAC-21.A3.2B.6
Guizzo, Gian Paolo	CA	IAC-21.B4.6A.11
Gujar, Yadnesh	CA	IAC-21.E2.4.13
Gujral, Akhil	A	IAC-21.D2.1.7
Gulczyński, Mateusz	A	IAC-21.D6.2-D2.9.4
Gunawan, Bryan	CA	IAC-21.E1.3.12
Gunga, Hanns-Christian	CA	IAC-21.A1.1.5
Guo, Chengjun	CA	IAC-21.B5.1.4

72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

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Guo, Hao	CA	IAC-21.D2.6.10
Guo, Jianqiao	CA	IAC-21.C2.3.12
GUO, Kang	CA	IAC-21.D2.5.11
Guo, Linli	CA	IAC-21.A3.1.2
Guo, Linli	CA	IAC-21.D3.1.11
Guo, Yanning	CA	IAC-21.C1.1.10
Guo, Yufei	A	IAC-21.A3.IP.4
Guo, Yufei	CA	IAC-21.A6.IP.4
Guo, Zhengyong	CA	IAC-21.B6.IP.11
Gupta, Aman	CA	IAC-21.E2.3-GTS.4.11
Gupta, Neeraj	A	IAC-21.B3.8.3
Gupta, Subhadr	A	IAC-21.A6.2.8
Gupta, Suvigya	CA	IAC-21.A6.2.8
Gurvits, Leonid	A	IAC-21.A7.2.5
Gushin, Vadim	CA	IAC-21.A1.1.2
Gushin, Vadim	CA	IAC-21.A1.1.3
Gustavsson, Jimmy	CA	IAC-21.B4.2.9
Gustavsson, Jimmy	CA	IAC-21.B4.9-GTS.5.9
Gutierrez-Ramon, Roger	CA	IAC-21.C1.5.1
Gutierrez-Ramon, Roger	CA	IAC-21.C1.7.4
Gutierrez-Ramon, Roger	A	IAC-21.C1.7.5
Guven, Ugur	CA	IAC-21.D2.2.12
Guven, Ugur	CA	IAC-21.C3.2.7
Guven, Ugur	CA	IAC-21.B6.4-B3.4.4
Guyon, Vincent	CA	IAC-21.D1.4A.6
Guzmán Ortiz, Karen Daniela	CA	IAC-21.B4.IP.15
Guémené, Corentin	CA	IAC-21.B1.IP.12
Guémené, Corentin	A	IAC-21.C3.IP.4
Guémené, Corentin	CA	IAC-21.B1.5.15
Gäßler, Björn	CA	IAC-21.D2.6.2
Gómez Martínez, Harvey	CA	IAC-21.A3.4B.9
Göttfert, Tobias	CA	IAC-21.B3.4-B6.4.9
Gülhan, Ali	CA	IAC-21.D2.4.4
Gülhan, Ali	A	IAC-21.D2.6.4
Gülhan, Ali	A	IAC-21.D2.6.5
Günzel, Dominik	CA	IAC-21.B5.1.3

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Habl, Lui	CA	IAC-21.C4.6.6
Hablani, Hari	CA	IAC-21.B2.6.9
Hachiya, Yuri	A	IAC-21.B2.4.14
Hackel, Stefan	CA	IAC-21.A6.9.4
Hackel, Stefan	A	IAC-21.C1.6.6
HADJ DIDA, Abdelkader	A	IAC-21.C3.3.5
HADJ DIDA, Abdelkader	A	IAC-21.C3.IP.3
Haeuplik-Meusburger, Sandra	A	IAC-21.E4.2.5
Hagel, Erik	CA	IAC-21.C4.3.9
Hagemann, Gerald	CA	IAC-21.D2.4.4
Hager, Philipp	CA	IAC-21.A3.2A.8
Hager, Philipp	CA	IAC-21.A3.2A.9
Hager, Philipp	CA	IAC-21.A3.2A.10
Hagsved, David	CA	IAC-21.A7.1.5
Haines, Agatha	CA	IAC-21.E5.3.7
HAKAMADA, RODRIGO EIJI	CA	IAC-21.E1.2.3
Hakim, Patria Rachman	CA	IAC-21.B6.IP.9
Haldemann, Albert	CA	IAC-21.A3.3A.4
Hall, Emily	CA	IAC-21.D4.1.13
Hall, Sophie	CA	IAC-21.A3.2A.8
Hall, Vern	CA	IAC-21.D4.3.2
Halloran, Kate	CA	IAC-21.A3.2B.13
Hamed, Mohamed	CA	IAC-21.A2.3.4
Hameed, Hamza	A	IAC-21.E7.4.5
Hameed, Hamza	A	IAC-21.E9.1-A6.8.7
Hamel, Jean-Francois	CA	IAC-21.A3.2C.10
Hamidi, Miriam	A	IAC-21.E8.1.3
Hampton, Donald L	CA	IAC-21.E1.3.12
Han, Dapeng	CA	IAC-21.B4.6A.5
Han, Dapeng	CA	IAC-21.B4.IP.7
Han, Yu	CA	IAC-21.A3.3B.5
Hanacek, John	A	IAC-21.D4.1.10
Hanada, Toshiya	CA	IAC-21.A6.2.5

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Hanson, Svetlana	A	IAC-21.D4.1.16
Hao, Xiaolin	CA	IAC-21.C4.2.13
Haohai, Xu	CA	IAC-21.C4.IP.17
HARA, Yushin	A	IAC-21.C2.9.1
HARA, Yushin	CA	IAC-21.C2.9.10
Harada, Ryusuke	CA	IAC-21.A6.2.5
Harakály, György	CA	IAC-21.C2.5.10
Harasymczuk, Matt	CA	IAC-21.A3.IP.32
Hargitai, Henrik	CA	IAC-21.E8.1.2
Harikrishnan, Haritha	A	IAC-21.B1.IP.10
Harrington, Elise	A	IAC-21.A3.IP.43
Harrington, Elise	A	IAC-21.A5.IP.4
Harris, Toby	CA	IAC-21.A6.2.7
Harris, Toby	A	IAC-21.A6.7.4
Harter, Bryan	CA	IAC-21.B6.2.1
Hartmann, Anne	CA	IAC-21.A2.5.5
Harvey, Alvin D.	CA	IAC-21.E1.9.2
Harwood, Jay	A	IAC-21.D1.2.4
Harwood, Jay	CA	IAC-21.A3.IP.60
Hasbi, Wahyudi	A	IAC-21.B4.IP.11
Hasbi, Wahyudi	CA	IAC-21.E5.4.3
Haschemi, Pouya	CA	IAC-21.C2.1.12
Haser, Benjamin	CA	IAC-21.B4.7.6
Haser, Benjamin	CA	IAC-21.B6.2.6
Haskins, Christopher	CA	IAC-21.B2.3.3
Haslehurst, Andrew	A	IAC-21.B4.4.12
Hassan, Moataz	CA	IAC-21.A3.IP.37
Hassan, Omar	CA	IAC-21.B2.IP.1
Hasson, Nicholas	CA	IAC-21.A3.IP.44
Hastie, Peter G. B.	A	IAC-21.C2.2.12
Hatley, Ross	CA	IAC-21.E6.3.6
Hauschildt, Harald	CA	IAC-21.B2.2.1
Haverson, Summer	CA	IAC-21.D3.2B.9
Havivi, Shiran	CA	IAC-21.E1.2.3
Hay, Rotana	CA	IAC-21.A3.IP.3
Haytham Esmat, Maryam	CA	IAC-21.A3.IP.37
Haloń, Michał	CA	IAC-21.D2.5.10
He, Jing	CA	IAC-21.B2.4.11
HE, TENG	A	IAC-21.D4.3.10
He, Yunhan	CA	IAC-21.B4.6A.7
He, Yunhan	CA	IAC-21.B4.IP.7
Healy, Peter	A	IAC-21.E2.1.10
Heaslet, Bret	CA	IAC-21.B3.8.3
Hedman, Niklas	CA	IAC-21.A3.1.5
Heemskerck, Marc	CA	IAC-21.A3.2B.6
Heemskerck, Marc	A	IAC-21.E2.3-GTS.4.14
Heemskerck, Marc	A	IAC-21.A3.IP.35
Heemskerck, Marc	CA	IAC-21.A3.2C.15
Heemskerck, Marc	CA	IAC-21.A3.2C.16
Heil, Melanie	CA	IAC-21.B1.IP.8
Heiligers, Jeannette	CA	IAC-21.C1.3.5
Hein, Andreas	CA	IAC-21.A3.IP.58
Heinz, Nicolas	CA	IAC-21.B4.IP.13
Hendrick, Patrick	CA	IAC-21.D2.3.12
Hendriks, Dries	CA	IAC-21.E2.3-GTS.4.13
Henkel, Maximilian	CA	IAC-21.B2.3.6
Henneberg, Johannes	CA	IAC-21.B4.4.2
Herawan, Agus	CA	IAC-21.B6.IP.9
Herd, Andrew	CA	IAC-21.D5.2.5
Herdich, Georg	CA	IAC-21.C2.4.8
Herdich, Georg	CA	IAC-21.D1.4A.3
Herdich, Georg	CA	IAC-21.B4.IP.13
Herdich, Georg	CA	IAC-21.A2.5.8
Herdich, Georg	CA	IAC-21.B4.5A-C4.8.4
Herdich, Georg	CA	IAC-21.B4.9-GTS.5.5
Heredia, Enrique	CA	IAC-21.A3.2B.9
Hermerisdorf, Mirko	CA	IAC-21.D2.2.5
Hermosin, Pablo	A	IAC-21.A3.5.3
Hermosin, Pablo	CA	IAC-21.B4.9-GTS.5.1
Hernandez, Elizabeth	CA	IAC-21.E1.3.12
Hernández, Alvaro	CA	IAC-21.C1.3.8
Hernández Torres, Francisco Luis	CA	IAC-21.B4.IP.15
Herrera, Cameron	CA	IAC-21.A6.8-E9.1.10
Herrera, Katherinne	A	IAC-21.E1.7.5
Hertel, Victor	CA	IAC-21.B1.5.9

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Herzog, Johannes	A	IAC-21.A6.1.6
Herzog, Johannes	CA	IAC-21.C1.6.6
Hestad, Theresia	CA	IAC-21.B4.2.9
Heverly, Matthew	CA	IAC-21.A3.3A.5
Hijlkema, Jouke	CA	IAC-21.D2.3.12
Hildebrandt, Jérôme	CA	IAC-21.D1.2.3
Hildebrandt, Jérôme	CA	IAC-21.D1.3.1
Hillier, Fiona	CA	IAC-21.A3.2A.8
Hilton, Samuel	CA	IAC-21.D3.3.5
Hilário, Pedro Ataíde	CA	IAC-21.E6.4.10
Hindle, Allyson	CA	IAC-21.A1.4.7
Hinterman, Eric	A	IAC-21.A5.2.4
Hinz, Robert	CA	IAC-21.B5.1.3
Hirabayashi, Masatoshi	CA	IAC-21.A3.4A.3
Hiraawa, Naoki	A	IAC-21.C1.7.10
Hiraki, Hiromichi	CA	IAC-21.D2.4.1
Hire, Shivam	A	IAC-21.E2.3-GTS.4.11
Hire, Shivam	CA	IAC-21.E2.4.12
Hirose, Yuto	A	IAC-21.C1.3.4
Hirvonen, Miika	CA	IAC-21.A2.6.6
Hobbs, David	CA	IAC-21.B4.6B.11
Hodgkinson, Jane	A	IAC-21.B5.2.15
Hodowaniec, Hubert	CA	IAC-21.B1.3.5
Hoehn, Alexander	CA	IAC-21.A1.3.6
Hoehn, Alexander	CA	IAC-21.A2.7.1
Hoehn, Carla	CA	IAC-21.A2.7.2
Hoeijmakers, Jens	CA	IAC-21.A7.3.7
Hoellrich, Mikaela	CA	IAC-21.A1.7.4
Hoenes, Christoph	CA	IAC-21.A3.2B.6
Hofacker, Max	CA	IAC-21.A3.4B.9
Hoffman, Lars	A	IAC-21.B4.5.1
Hofmann, Benjamin	CA	IAC-21.A6.1.6
Hofmann, Christian	CA	IAC-21.C1.3.6
Hofmann, Mahulena	A	IAC-21.E7.5.13
Hofstetter, Christoph	CA	IAC-21.C2.5.10
Hohmann, Sören	CA	IAC-21.A3.2A.3
Hokamoto, Shinji	CA	IAC-21.C1.3.4
Hokamoto, Shinji	CA	IAC-21.C1.7.10
Holderried, Roman	CA	IAC-21.A3.4A.8
Holland, Travis	CA	IAC-21.E5.4.7
Holling, Emma	CA	IAC-21.E1.6.4
Hollingsworth, Keith	CA	IAC-21.C4.10-C3.5.11
Holmer, Curt	A	IAC-21.B3.7.5
Holmes, Megan	CA	IAC-21.B1.5.5
Holmqvist, Karin	CA	IAC-21.E6.5-GTS.1.6
Holodovsky, Vadim	CA	IAC-21.B4.4.6
Holsclaw, Greg	CA	IAC-21.A3.3A.1
Holsclaw, Greg	CA	IAC-21.A3.3B.1
Holsclaw, Greg	CA	IAC-21.A3.IP.1
Holzappel, Florian	CA	IAC-21.D5.1.5
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Jagadam, Nitya	CA	IAC-21.E1.IP.8
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Jahjah, Munzer	CA	IAC-21.C2.5.5
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Jain, Adarsh	A	IAC-21.B2.5.8
Jain, Ritesh	CA	IAC-21.E6.2.2
Jain, Ritesh	CA	IAC-21.E1.5.11
Jain, Tanishqa	CA	IAC-21.C1.IP.4
Jain, Umang	CA	IAC-21.B3.5.1
Jalali, Mohammad	CA	IAC-21.B5.2.5
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Jamanca Lino, Gustavo Alberto Steven	A	IAC-21.A5.2.7
Jamanca-Lino, Gustavo	CA	IAC-21.D3.1.7
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Jha, Devanshu	CA	IAC-21.E3.2.14
Jha, Shankar	CA	IAC-21.A2.7.8
Jia, Peter	CA	IAC-21.B6.1.2
Jiang, Hai	CA	IAC-21.A6.7.10
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Jiang, Lianxiang	A	IAC-21.B4.IP.4
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Jigmeddorj, Vanchinkhuu	CA	IAC-21.B4.1.6
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Karmustaji, Saud	CA	IAC-21.E1.IP.10
Karolewski, Łukasz	CA	IAC-21.D2.6.9
Karrim, Nadia	CA	IAC-21.D3.2B.7
Karthik, S	CA	IAC-21.D4.1.8
Karthikeyan, Goutham	A	IAC-21.D2.7.3
Karananithi, Visweswaran	A	IAC-21.B2.4.3
Kashirin, Dmitriy	CA	IAC-21.C4.6.8
Kashiyama, Reo	A	IAC-21.D2.8-A5.4.2
Kasi, Rama Theertha	CA	IAC-21.D5.4.7
Kasliwal, Daksha	CA	IAC-21.B4.9-GTS.5.6
Katsonis, Konstantinos	CA	IAC-21.C4.5.12
Kauk-Kuusik, Marit	CA	IAC-21.C3.4.7
Kaur, Jasleen	CA	IAC-21.A5.1.15
Kaur, Ravneet	CA	IAC-21.B2.4.4
Kaur, Ravneet	A	IAC-21.A1.IP.2
Kawa, Bartosz	CA	IAC-21.A2.7.6
Kawabe, Hiroki	A	IAC-21.C2.1.6
Kawaguchi, Junichiro	CA	IAC-21.C1.1.9
Kawaguchi, Junichiro	CA	IAC-21.A7.3.6
Kawaguchi, Junichiro	CA	IAC-21.B2.5.10
Kawahara, Kosuke	CA	IAC-21.B6.1.9
Kawahara, Kosuke	CA	IAC-21.B6.3.2
Kawakami, Taiko	A	IAC-21.B3.2.3
Kawakami, Taiko	CA	IAC-21.D3.1.6
Kawakami, Taiko	CA	IAC-21.E1.7.10
Kawakami, Taiko	CA	IAC-21.D6.3.4
Kawakami, Taiko	CA	IAC-21.B3.9-GTS.2.10
Kawakatsu, Yasuhiro	CA	IAC-21.C1.5.1
Kawakatsu, Yasuhiro	CA	IAC-21.C1.5.2
Kawakatsu, Yasuhiro	A	IAC-21.A3.4A.6
Kawamoto, Satomi	A	IAC-21.A6.2.5
Kawulok, Michal	CA	IAC-21.A6.1.7
Kawulok, Michal	A	IAC-21.B1.4.8
Kay, Steven	A	IAC-21.D1.4A.8
Kazda, Tomáš	CA	IAC-21.C3.IP.1
Keating, Armand	CA	IAC-21.A1.8.2
Keaton, Jacob	CA	IAC-21.B3.3.1
Kegel, Koen	CA	IAC-21.D3.IP.4
Kegel, Koen	A	IAC-21.D3.IP.5

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Name	Role	Paper
Kegel, Koen	CA	IAC-21.D3.IP.6
Kelkar, Aditya	CA	IAC-21.E2.4.14
Kelleher, Lorcan	CA	IAC-21.E1.5.11
Keller, Christoph	CA	IAC-21.A7.3.7
Keller, Jacob	A	IAC-21.D6.1.2
Kellermann, Timo	CA	IAC-21.B2.1.1
Kemble, Stephen	CA	IAC-21.C1.5.7
Kemp, Jack	CA	IAC-21.D1.4A.8
Kempf, Florian	A	IAC-21.D1.1.2
Kempf, Florian	CA	IAC-21.B4.7.8
Kempf, Florian	A	IAC-21.D1.4B.8
Kendall, David	CA	IAC-21.E3.4.6
Kendall, Randolph	CA	IAC-21.D2.1.7
Kendall-Bell, Grant	CA	IAC-21.C4.9.7
Kendall-Bell, Grant	CA	IAC-21.D3.2B.7
Kennedy, Daniel	CA	IAC-21.B3.1.6
Kennedy, Erin	CA	IAC-21.D3.1.7
Kent, Jack	CA	IAC-21.D1.IP.3
Kenzhegarayeva, Angsagan	CA	IAC-21.C2.6.11
Kerber, Sabrina	CA	IAC-21.A3.2B.6
Kerber, Sabrina	CA	IAC-21.A3.2C.15
Kerolle, Mclee	CA	IAC-21.E7.1.8
Kerr, Emma	A	IAC-21.A6.1.10
Kerr, Emma	CA	IAC-21.A6.2.6
Kerr, Murray	A	IAC-21.B5.1.3
Kerr, Murray	CA	IAC-21.B2.5.7
Kerr, Murray	CA	IAC-21.B6.2.9
Kershenbaum, Arik	CA	IAC-21.A4.2.2
Kete, Rok	A	IAC-21.D3.2A.11
Ketwetsuriya, Chatchalerm	CA	IAC-21.A3.IP.19
Khader, Zafer Amtul	A	IAC-21.C4.9.11
Khaled, Marwa	CA	IAC-21.A3.IP.37
Khan, Aaliya	CA	IAC-21.C1.4.2
Khan, Amer	A	IAC-21.E4.2.9
Khan, Areeba	CA	IAC-21.A1.5.6
Khan, Naveed	A	IAC-21.A1.8.8
Khan, Sarmad Habib	CA	IAC-21.A1.5.6
Khan, Shuhab	CA	IAC-21.E1.3.12
Khanal, Ankit	CA	IAC-21.D5.1.3
Khanal, Ankit	CA	IAC-21.E3.2.11
Khanal, Nischal	CA	IAC-21.E3.2.11
Khare, Ishan	CA	IAC-21.B2.4.12
Kharlamov, Maksim	CA	IAC-21.A1.2.10
Kharlamov, Maksim	CA	IAC-21.B3.5.2
Khatri, Yashica	A	IAC-21.C1.3.12
Khatab, Nada	CA	IAC-21.D5.1.5
Khismatrao, Raj	CA	IAC-21.A6.2.8
Khlystov, Nikolai	CA	IAC-21.A6.8-E9.1.3
Khodabakhshi, Shahrokh	CA	IAC-21.C2.1.12
Kholkin, Oleg	CA	IAC-21.C2.6.11
Khoory, Mohammad	CA	IAC-21.A3.2A.14
Khoory, Mohammad	CA	IAC-21.A3.IP.29
Khoory, Mohammed	A	IAC-21.D1.3.3
Khoory, Mohammed	CA	IAC-21.A3.3B.1
Khun, Lukas	CA	IAC-21.D4.5.7
Khurelbaatar, Luvsanbat	CA	IAC-21.B4.1.6
Kickingner, Nina	A	IAC-21.B5.2.1
Kiesling, Dylan	CA	IAC-21.GTS.5-B4.9.4
Kiesling, Paul	A	IAC-21.GTS.5-B4.9.4
Kikuchi, Koichi	CA	IAC-21.E7.5.12
Kikuchi, Shota	CA	IAC-21.A3.4A.2
Kikuchi, Shota	CA	IAC-21.A3.4A.3
Kim, Hongrae	CA	IAC-21.B4.IP.8
Kim, Hye-In	CA	IAC-21.C2.7.3
Kim, Sangkyun	CA	IAC-21.B4.2.3
Kim, Sangkyun	CA	IAC-21.C3.3.1
Kim, Sangkyun	CA	IAC-21.B4.IP.21
Kim, Sangkyun	CA	IAC-21.B4.9-GTS.5.7
Kim, Seok	CA	IAC-21.B4.IP.8
Kim, Yebin	CA	IAC-21.E3.2.11
Kimler, Beau	CA	IAC-21.E2.4.4
Kimmel, Lauri	CA	IAC-21.B6.3.10
Kimpe, Andreas	CA	IAC-21.A3.2A.3
King, Luke	CA	IAC-21.D1.6.6
King-Smith, Matthew	CA	IAC-21.D1.6.1

Name	Role	Paper
Kinne, Peter	CA	IAC-21.B5.2.16
Kinnison, James	CA	IAC-21.D4.4.1
Kinnunen, Antti	CA	IAC-21.B4.9-GTS.5.9
Kiran, Anoop	CA	IAC-21.B1.3.6
Kirchhartz, Rainer	A	IAC-21.D2.6.3
Kirchhof, Edemar	CA	IAC-21.C4.3.7
Kirchhof, Edemar	CA	IAC-21.C4.2.9
Kirchhof, Edemar	CA	IAC-21.C4.4.9
Kirchmeyer, Alexandre	CA	IAC-21.E2.3-GTS.4.6
Kirchner, Georg	CA	IAC-21.A6.7.3
Kirihara, Yuko	CA	IAC-21.B3.9-GTS.2.10
Kirk, Samuel	CA	IAC-21.E2.4.2
Kirschner, Michael	CA	IAC-21.C1.6.6
Király, Nikolas	CA	IAC-21.C3.IP.1
Kisdi, Aron	CA	IAC-21.A3.1.4
Kisdi, Aron	CA	IAC-21.D1.4A.8
Kishimoto, Makiko	A	IAC-21.B4.2.3
Kishimoto, Makiko	CA	IAC-21.B4.3.3
Kitaeva, Alena	CA	IAC-21.C4.5.7
Kitaeva, Alena	CA	IAC-21.C4.5.12
Kitagawa, Yasuhiro	CA	IAC-21.A6.2.5
Kitayama, Osamu	CA	IAC-21.D2.8-A5.4.2
Kjellman, Rebecka	CA	IAC-21.A2.5.10
Kleinschrodt, Alexander	CA	IAC-21.B4.3.12
Klejman, Tsvi	CA	IAC-21.D1.2.4
Kleszczyński, Dominik	CA	IAC-21.A3.2B.9
Kletetschka, Gunther	CA	IAC-21.A3.IP.44
Klevanski, Josef	CA	IAC-21.D2.6.1
Klimenok, Filip	CA	IAC-21.C4.3.9
Klindžić, Dora	CA	IAC-21.A7.3.7
Klinkner, Sabine	CA	IAC-21.D1.2.3
Klinkner, Sabine	CA	IAC-21.A7.2.4
Klinkner, Sabine	CA	IAC-21.B4.4.2
Kminek, Gerhard	CA	IAC-21.A3.1.5
Knap, Vaclav	A	IAC-21.B4.IP.24
Knapman, John	CA	IAC-21.D4.3.6
Knavel, Justin	CA	IAC-21.A3.3B.1
Knavel, Justin	CA	IAC-21.A3.IP.29
Kneib, Jean-Paul	CA	IAC-21.A3.2C.12
Kneib, Jean-Paul	CA	IAC-21.A6.8-E9.1.5
Knicely, Joshua	A	IAC-21.A3.IP.44
Knight, Jacqueline	CA	IAC-21.E5.3.7
Knorr, Christian	CA	IAC-21.D2.4.4
Knöll, Niklas Emil	CA	IAC-21.D2.3.4
Kobald, Mario	CA	IAC-21.D2.7.3
Kobayashi, Yusuke	CA	IAC-21.A6.10-B6.5.1
Kobrick, Ryan	CA	IAC-21.A1.1.7
Kocvara, Michal	CA	IAC-21.A5.4-D2.8.1
Kodilkar, Sairaj	CA	IAC-21.E2.4.12
Kodilkar, Sairaj	CA	IAC-21.E2.4.13
Kodukula, Ananya	CA	IAC-21.A4.2.9
Kodukula, Ananya	A	IAC-21.C4.5.3
Kodukula, Ananya	A	IAC-21.A3.IP.28
Kodukula, Ananya	CA	IAC-21.A2.5.7
Kodukula, Ananya	CA	IAC-21.E1.9.5
Koekkoek, Ewout	CA	IAC-21.A3.2A.8
Kogut, Leszek	CA	IAC-21.B1.3.5
Kohberg, Marko	CA	IAC-21.D2.2.6
Kohtake, Naohiko	CA	IAC-21.D4.2.3
Koizumi, Hiroyuki	CA	IAC-21.C4.3.6
Koizumi, Hiroyuki	CA	IAC-21.C4.8-B4.5A.3
Kojima, Hiromichi	CA	IAC-21.E7.5.12
Kolb, Alexander	CA	IAC-21.A3.1.7
Kolev, Dimitar	CA	IAC-21.B2.2.2
Kolev, Dimitar	CA	IAC-21.B2.2.4
Kolinova, Svetlana	CA	IAC-21.E4.1.4
Koller, Josef	A	IAC-21.E9.IP.3
Kolodziejczyk, Agata	CA	IAC-21.A3.2B.6
Kolodziejczyk, Agata	CA	IAC-21.A3.IP.32
Kommel, Renata	CA	IAC-21.A6.8-E9.1.10
Komurasaki, Kimiya	CA	IAC-21.C4.3.6
Kondoh, Yoshinori	CA	IAC-21.B2.4.14
Konoshenko, Victor	CA	IAC-21.B3.3.3
Konstantinidis, Alexandros	CA	IAC-21.D3.2B.10
Koo, Kyung-Rae	CA	IAC-21.B4.IP.8

Name	Role	Paper
Kopylov, Stanislav	A	IAC-21.E7.IP.3
Koren, Ilan	CA	IAC-21.B4.4.6
Korn, Christian	CA	IAC-21.B4.IP.13
Korn, Christian	A	IAC-21.A2.5.8
Kornilova, Ludmila	CA	IAC-21.B3.9-GTS.2.7
Kornilova, Ludmila	CA	IAC-21.B3.9-GTS.2.8
Korosteleva, Alexandra	CA	IAC-21.B3.7.4
Korpershoek, Karlijn	CA	IAC-21.E5.IP.6
Korshunov, Denis	CA	IAC-21.B3.7.4
Koryanov, Victor	CA	IAC-21.A3.5.4
Koryanov, Victor	CA	IAC-21.B4.8.11
Koryanov, Vsevolod	CA	IAC-21.C1.5.4
Koseoglu, Teoman	CA	IAC-21.E2.3-GTS.4.13
Kostopoulos, Vassilis	CA	IAC-21.A3.IP.27
Kostrzewa, Daniel	CA	IAC-21.A6.1.7
Kostrzewa, Daniel	CA	IAC-21.B6.1.5
Kostrzewa, Daniel	CA	IAC-21.B1.4.8
Kotake, Hideaki	CA	IAC-21.B2.2.2
Kotake, Hideaki	A	IAC-21.B2.2.5
Kotlovskiy, Polina	CA	IAC-21.E2.3-GTS.4.3
Koudelka, Otto	CA	IAC-21.A6.1.5
Koudelka, Otto	CA	IAC-21.B5.1.3
Koudelka, Otto	CA	IAC-21.B2.3.6
Koudelka, Otto	A	IAC-21.B2.5.7
Koudelka, Otto	CA	IAC-21.A6.IP.24
Koul, Vatasta	CA	IAC-21.C1.IP.4
Koul, Vatasta	CA	IAC-21.B3.5.1
Kouyama, Toru	CA	IAC-21.A3.4A.3
Kovacova, Zuzana	CA	IAC-21.C4.5.12
Kovalenko, Irina	A	IAC-21.A7.2.11
Kovrov, Gennady	CA	IAC-21.A1.2.2
Kowalewski, Jędrzej	CA	IAC-21.B1.3.5
Kozawska, Aleksandra	CA	IAC-21.A5.1.10
Kozin, Filipp	CA	IAC-21.A6.5.3
Krainova, Irina	CA	IAC-21.C2.6.12
Krajovan, Melanie	CA	IAC-21.D5.2.3
Kranz, Thilo	CA	IAC-21.D2.2.1
Krasteva, Mariya	A	IAC-21.A7.3.7
Krasuski, Mateusz	CA	IAC-21.D2.5.9
Krawczuk, Szymon	CA	IAC-21.C2.3.10
Krawczuk, Szymon	A	IAC-21.E1.5.10
Krawczuk, Szymon	A	IAC-21.A2.IP.2
Krawczuk, Szymon	CA	IAC-21.C2.7.11
Krawczuk, Szymon	CA	IAC-21.B4.6B.7
Kremmydas, Panagiotis D.	CA	IAC-21.B4.6.4
Kremmydas, Panagiotis D.	CA	IAC-21.D1.4B.8
Krenn, Rainer	CA	IAC-21.A3.2A.3
Krieger, Gerhard	CA	IAC-21.B1.2.7
Krimigis, Stamatios	CA	IAC-21.D4.4.1
Kring, David	CA	IAC-21.A3.IP.43
Kristmann, Katrin	A	IAC-21.C3.4.7
Krivopalova, Alexandra	CA	IAC-21.A4.1.13
Krivova, Victoria	CA	IAC-21.D4.1.12
Krivova, Victoria	A	IAC-21.D1.2.5
Kroupnik, Guennadi	A	IAC-21.B1.6.11
Krueger, Thomas	CA	IAC-21.A3.2A.3
Krummen, Sven	A	IAC-21.D2.6.1
Krustok, Jüri	CA	IAC-21.C3.4.7
Krylov, Andrey	CA	IAC-21.B3.4-B6.4.11
Kryukovskiy, Vsevolod	CA	IAC-21.B4.6B.10
Kryukovsky, Vsevolod	CA	IAC-21.E2.4.8
Krzyżanowski, Stanisław	A	IAC-21.B1.1.4
Krämer, Stefan	A	IAC-21.A2.3.7
Krämer, Stefan	CA	IAC-21.A2.5.2
Krügener, Moritz	CA	IAC-21.C4.1.1
Kubicka, Manuel	CA	IAC-21.B2.3.6
Kubo-oka, Toshihiro	CA	IAC-21.B2.2.2
Kubooka, Toshihiro	CA	IAC-21.B2.2.5
Kubota, Takashi	CA	IAC-21.B2.4.1
Kucher, Lisa	CA	IAC-21.D3.1.7
Kucukosman, Cansev	CA	IAC-21.D2.5.2
Kudryavtsev, Sergey	CA	IAC-21.B3.4-B6.4.11
Kueppers, Michael	CA	IAC-21.A3.4B.2
Kugler, Justin	CA	IAC-21.A3.IP.31
Kuhm, Hendrik	CA	IAC-21.D1.2.3

Name	Role	Paper
Kuhn, Thomas	CA	IAC-21.E1.5.2
Kuhn, Thomas	CA	IAC-21.A2.5.5
Kuhn, Thomas	CA	IAC-21.A2.5.10
Kuiper, Mary	CA	IAC-21.A3.2B.6
Kuiper, Mary	CA	IAC-21.E1.9.15
Kukanov, Vladislav	CA	IAC-21.A1.3.8
Kukharenska, A	CA	IAC-21.B4.2.12
Kukharenska, A	CA	IAC-21.A3.2A.5
Kuklin, Andrey	A	IAC-21.B1.6.10
Kukoba, Tatyana	CA	IAC-21.A1.2.10
Kulkarni, Kunal	A	IAC-21.A3.IP.5
Kulkarni, Ravindra	CA	IAC-21.A5.1.11
Kulkarni, Ravindra	CA	IAC-21.B2.6.12
KULKARNI, ROHIT	CA	IAC-21.E2.4.13
Kulu, Erik	A	IAC-21.D2.9-D6.2.3
Kulu, Erik	A	IAC-21.D3.3.10
Kulyk, Oleksii	A	IAC-21.E1.3.11
Kumar, Sidhant	CA	IAC-21.A3.IP.38
Kumar, Sidhant	CA	IAC-21.B4.9-GTS.5.5
Kumar, Vinod	CA	IAC-21.C1.9.5
KUMAR K, ASHOK	CA	IAC-21.C1.IP.1
Kumar Madakashira, Hemanth	CA	IAC-21.A3.2A.11
Kumar S., Sunil	CA	IAC-21.C4.2.6
Kumar Singh, Shivam	CA	IAC-21.C2.6.10
Kumari, Kajal	CA	IAC-21.A3.1.10
Kumazawa, Hisashi	CA	IAC-21.C2.1.6
Kumbargere Nagraj, Sumanth	CA	IAC-21.E5.3.7
Kunimori, Hiroo	CA	IAC-21.B2.2.2
Kunitskaya, Alina	CA	IAC-21.E1.5.6
Kunstadter, Christopher	A	IAC-21.A6.2.4
Kunze, Lars	CA	IAC-21.A3.3B.7
Kuoxiang, Zhang	CA	IAC-21.A7.3.9
Kurgan, Arzu	CA	IAC-21.D4.1.12
Kuritsin, Andrey	CA	IAC-21.B3.5.2
Kuriyama, Ikuko	A	IAC-21.E7.5.12
Kurono, Ayako	A	IAC-21.E5.3.10
Kurono, Ayako	CA	IAC-21.E1.8.2
Kurono, Ayako	A	IAC-21.B3.9-GTS.2.1
Kurono, Haruto	CA	IAC-21.E5.3.10
Kurono, Haruto	A	IAC-21.E1.8.2
Kurono, Haruto	CA	IAC-21.B3.9-GTS.2.1
Kurzrok, Andrew	A	IAC-21.E3.4.9
Kushnirenko, Anatoli	CA	IAC-21.A2.2.6
Kussmaul, Anna	CA	IAC-21.A1.2.11
Kussmaul, Anna	CA	IAC-21.A1.IP.1
Kusumoto, Tetsuya	A	IAC-21.C1.1.9
Kutnik, Irina	CA	IAC-21.B3.5.2
Kutufa, Niccola	CA	IAC-21.B4.6A.12
Kuusniemi, Heidi	CA	IAC-21.B4.9-GTS.5.9
Kuusvek, Rainer	A	IAC-21.B4.6B.3
Kuwahara, Toshinori	CA	IAC-21.B4.3.7
Kuznetsov, Aleksey	CA	IAC-21.C4.2.9
Kuznetsov, Eduard	A	IAC-21.A6.IP.2
Kwon, Sejin	CA	IAC-21.C4.1.4
Kwon, Sejin	CA	IAC-21.C4.2.5
Kwon, Sejin	CA	IAC-21.C4.4.7
Kwon, Sejin	CA	IAC-21.B6.IP.10
Kyr, Peter	CA	IAC-21.A3.2A.3
Kästel, Jürgen	CA	IAC-21.A6.6.2
Könemann, Thorben	A	IAC-21.A2.5.1
Kössling, Matthias	CA	IAC-21.C4.10-C3.5.1
Kühn, Jonas	CA	IAC-21.A7.3.7

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L, Ravi Kumar	CA	IAC-21.E2.1.3
L. Azad, Nasser	CA	IAC-21.A6.9.5
La Regina, Veronica	CA	IAC-21.E1.2.6
La Rosa Betancourt, Manuel	CA	IAC-21.C2.4.7
La Rosa Betancourt, Manuel	CA	IAC-21.C4.6.7
La Rosa Betancourt, Manuel	A	IAC-21.D2.5.5
La Rosa Betancourt, Manuel	CA	IAC-21.A3.2C.9
La Rosa Betancourt, Manuel	A	IAC-21.C3.5-C4.10.2
Laad, Aryan	CA	IAC-21.D1.IP.3
Labate, Demetrio	CA	IAC-21.B4.2.12

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Name	Role	Paper
Labate, Demetrio	CA	IAC-21.A3.2A.5
Lacroix, Simon	CA	IAC-21.A3.2B.9
Lafabrie, Romain	CA	IAC-21.A3.IP.32
Lafontan, Adrien	CA	IAC-21.A3.1.9
Lafontan, Adrien	CA	IAC-21.D3.2B.9
Lagadrilliere, Pierre-Alexis	A	IAC-21.B6.1.4
Lagarde, Thomas	A	IAC-21.B3.7.10
Lagger, Simone	CA	IAC-21.A5.1.13
Lagomasino, David	CA	IAC-21.B5.2.5
Lagomasino, David	CA	IAC-21.B1.5.7
Laguna-Juarez, Carlos	CA	IAC-21.C1.3.8
Laguna-Juarez, Carlos	CA	IAC-21.E1.6.2
Laguna-Juarez, Carlos	CA	IAC-21.D1.4B.7
Laister, Rob	CA	IAC-21.A1.8.2
Lajeunesse, Félix	CA	IAC-21.E1.7.13
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Lemmens, Stijn	CA	IAC-21.A6.2.6
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Lengowski, Michael	CA	IAC-21.D1.2.3
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Leshner, Richard	CA	IAC-21.A6.8-E9.1.10

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Li, Dongyu	CA	IAC-21.C1.IP.13
Li, Gongqiang	A	IAC-21.A6.7.10
Li, Haiyang	A	IAC-21.C1.IP.8
Li, Jie	A	IAC-21.D1.6.10
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Liu, Chengzhi	CA	IAC-21.A6.7.10
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Maestro Redondo, Paloma	CA	IAC-21.A2.5.5
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Milyayev, Konstantin	CA	IAC-21.E3.6.5
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Mimasu, Yuya	CA	IAC-21.C1.8.3
Mimura, Akifumi	CA	IAC-21.E1.7.10
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Mingo, Aloha	CA	IAC-21.C4.5.12
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Minville, Maxime	CA	IAC-21.A3.2C.10
Miotti, Luca	CA	IAC-21.B1.4.12

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Mishra, Hrishik	CA	IAC-21.D1.1.1
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Mitra, Pratheek	CA	IAC-21.C2.3.9
Mitsuhashi, Yui	CA	IAC-21.B4.3.7
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Mittal, Anamol	A	IAC-21.D5.1.3
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Mittermayer, Josef	CA	IAC-21.B1.2.7
Mittler, Petra	CA	IAC-21.B3.5.3
Mittler, Petra	CA	IAC-21.B3.6-A5.3.1
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Miyata, Kikuko	A	IAC-21.C2.7.8
Miyazaki, Eiji	CA	IAC-21.C2.8.4
Mocarski, David	CA	IAC-21.E1.3.5
Moccia, Antonio	CA	IAC-21.B4.7.10
Moczała, Bartosz	CA	IAC-21.D2.6.9
Modhish, Hadeel	A	IAC-21.B3.6-A5.3.6
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Moeller, Gregor	CA	IAC-21.B1.4.12
Moeller, Henrik Krogh	CA	IAC-21.B2.1.1
Moeller, Ralf	CA	IAC-21.A2.7.1
Moeller, Ralf	CA	IAC-21.A2.7.2
Moges, Mequanint	CA	IAC-21.E1.3.12
Mohamed, Somaia	CA	IAC-21.E3.1.7
Mohammadi Yengeje, Saba	CA	IAC-21.E1.5.11
Mohan, Chirayu	CA	IAC-21.A3.2B.6
Mohan, Chirayu	CA	IAC-21.A3.IP.14
Mohan, Chirayu	CA	IAC-21.A3.IP.32
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Mohana Krishnan, Arjun Menon	CA	IAC-21.C4.3.9
Mohanty, Mili	CA	IAC-21.E1.2.1
Mohite, Akshat	A	IAC-21.C2.5.9
Mohite, Akshat	CA	IAC-21.C2.6.10
Mohite, Akshat	CA	IAC-21.D2.9-D6.2.5
Moin, Aquib	CA	IAC-21.E1.4.4
Molares Moncayo, Laura	A	IAC-21.A1.6.4
Molina, Manuel	CA	IAC-21.E3.4.2
Molina, Marco	CA	IAC-21.B4.4.3
Molina, Marco	CA	IAC-21.E5.4.10
Molina, Maria	CA	IAC-21.E5.4.6
Molina, Miguel Angel	CA	IAC-21.E3.4.2
Molinaro, Antonella	CA	IAC-21.B2.1.2
Mollard, Juliette	CA	IAC-21.D3.2A.5
Molli, Serena	A	IAC-21.B2.6.2
Molotov, Igor	A	IAC-21.A6.1.12
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Monakhov, Dmitry	CA	IAC-21.B1.IP.14
Monakhova, Uliana	A	IAC-21.C1.3.9
Monat, Shay	CA	IAC-21.A3.2B.17
Monchieri, Emanuele	CA	IAC-21.A3.2C.18
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Monette, Maxime	CA	IAC-21.C4.10-C3.5.1
Monge, Luis	A	IAC-21.E3.1.11
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Montanari, Elias	A	IAC-21.B5.2.2
Montaruli, Marco Felice	A	IAC-21.A6.9.11
Monteith, Wayne	A	IAC-21.D6.1.1
Montenegro, Joao	CA	IAC-21.A3.2B.17
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Moore, Steven	CA	IAC-21.B3.9-GTS.2.8
Morabito, Andrea Francesco	CA	IAC-21.E1.IP.3
Morabito, Francesco Carlo	CA	IAC-21.E1.IP.3
Morabito, Giovanni	CA	IAC-21.C2.9.9
Moraitis, Daniil	CA	IAC-21.E2.1.9
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Morante, David	A	IAC-21.C1.5.8
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Morbidei, Lucia	CA	IAC-21.A1.8.15
Morbidity, Alfredo	CA	IAC-21.A7.2.3
Morchedi, Soudes	CA	IAC-21.B1.4.4
Mordovskiy, Alexei	CA	IAC-21.E2.3-GTS.4.3
More, Harshal	CA	IAC-21.B1.4.4
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Moreland, Scott	CA	IAC-21.A3.3A.5
Morelli, Andrea Carlo	CA	IAC-21.D4.1.1
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Moreno Villa, Victor Manuel	CA	IAC-21.C4.9.10
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Moretti, Emanuele	CA	IAC-21.C2.7.5
Morgan, Eleanor	CA	IAC-21.A1.5.4
Morgan, James	CA	IAC-21.D1.IP.3
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Mori, Hazuki	CA	IAC-21.A2.3.10
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Mori, Osamu	CA	IAC-21.C2.1.9
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Mori, Osamu	CA	IAC-21.A2.4.4
Mori, Osamu	CA	IAC-21.C1.7.3
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Morone, M. Cristina	CA	IAC-21.A1.5.3
Morozova, Elina	A	IAC-21.E7.IP.2
Morrell, Benjamin	CA	IAC-21.A1.6.10
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Morse, Andrew	CA	IAC-21.A3.2A.8
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Nalepa, Jakub	CA	IAC-21.B1.4.8
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Namta, Gourav	CA	IAC-21.A7.3.10
Namta, Gourav	CA	IAC-21.A7.3.11
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Nanjid, Narmandakh	CA	IAC-21.B4.1.6
Nanni, Francesca	CA	IAC-21.B3.7.7
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Napier Pereira e Silva, Cauê	CA	IAC-21.D1.4B.2
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Nasila, Antti	CA	IAC-21.B4.9-GTS.5.9
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Nasseri, Seyed Ali	CA	IAC-21.E1.9.12
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Nateghi, Vahid	A	IAC-21.A6.9.3
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Nautiyal, Anirudh	CA	IAC-21.C2.IP.8
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Neagu, Catalin-Daniel	CA	IAC-21.B4.2.9
Neduncheran, Adhithiyam	CA	IAC-21.A1.5.8
Neduncheran, Adhithiyam	CA	IAC-21.B4.IP.14
Neidlinger, Kristin	A	IAC-21.D4.2.8
Nelson, Anna	CA	IAC-21.B1.1.5
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Nergaard, Kim	CA	IAC-21.A3.2A.9
Nergaard, Kim	CA	IAC-21.A3.2A.10
Nerger, Rico	CA	IAC-21.A6.4.9
Nesladek, Milos	CA	IAC-21.E2.3-GTS.4.13
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Netti, Vittorio	CA	IAC-21.B3.7.10
Neubauer, Erich	CA	IAC-21.C4.5.12

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Newton, Elizabeth	CA	IAC-21.D6.1.2
Newton, Elizabeth	CA	IAC-21.A1.4.9
NG, Hon Fai	CA	IAC-21.E3.4.8
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Pawlicki, Diana	A	IAC-21.A1.IP.14
Pawlicki, Diana	A	IAC-21.C3.5-C4.10.7
Payan, Sébastien	CA	IAC-21.A7.1.5
Payet, Vincent	CA	IAC-21.A3.IP.62
Payton, Amanda	CA	IAC-21.B5.2.5
Pazik, Arthur	CA	IAC-21.D2.5.9
Pechenkova, Ekaterina	CA	IAC-21.B3.8.10
Pecover, David	CA	IAC-21.A3.3A.5
Peddakotla, Sai Abhishek	A	IAC-21.A6.2.9
Pedersen, Claire	CA	IAC-21.A3.2B.10
Pedivellano, Antonio	CA	IAC-21.B4.6B.11
Pedrini, Daniela	CA	IAC-21.C4.5.7
Peeters, Ann	CA	IAC-21.E5.1.1
Peeters, Ann	CA	IAC-21.E5.3.7
Peiris, Jude Thidushan	CA	IAC-21.E2.3-GTS.4.2
Pelella, Alessio Valentino	CA	IAC-21.C1.3.10
Pellegrini, Vincenzo	CA	IAC-21.E5.4.10
Peltz, Leora	CA	IAC-21.B3.7.9
Peluso, Daniel	CA	IAC-21.E1.8.5
Pelzner, Karol	CA	IAC-21.C2.3.10
Peng, Bo	CA	IAC-21.A3.IP.3
Pengfei, Li	CA	IAC-21.C4.IP.17
Pennington, Pamela	CA	IAC-21.E1.7.5
Pennypacker, Carlton	CA	IAC-21.E1.8.5
PENQUER, Antoine	CA	IAC-21.B1.2.2
Penso, Roeoe	A	IAC-21.B1.4.10
Penupati, Sai Tanmayee	CA	IAC-21.E1.9.5
Pepermans, Lars	CA	IAC-21.D2.3.4
Perdigues Armengol, Josep Maria	CA	IAC-21.B2.2.1
Pereira, Aaron	CA	IAC-21.A3.2A.3
Perera, Olga	CA	IAC-21.D4.1.16
Perez, Karen	A	IAC-21.A4.1.7
Perez, Rovin	CA	IAC-21.B4.2.5
Perez Montenegro, Carlos	CA	IAC-21.D1.2.2
Perez-Matias, Edgar	A	IAC-21.B1.IP.17
Perez-Poch, Antoni	A	IAC-21.E1.3.14
Perez-Poch, Antoni	A	IAC-21.D5.2.11
Perez-Poch, Antoni	A	IAC-21.A2.3.8
Perier-Camby, Maude	CA	IAC-21.E1.8.4
Perino, Maria Antonietta	CA	IAC-21.A3.1.2
Perino, Maria Antonietta	CA	IAC-21.A5.1.3
Perino, Maria Antonietta	A	IAC-21.D3.1.11
Perino, Maria Antonietta	CA	IAC-21.A3.3B.6
Perino, Maria Antonietta	CA	IAC-21.D1.5.3
Perlmutter, Maya	A	IAC-21.A1.4.9
Peroni, Moreno	CA	IAC-21.A6.9.8
Perrier, Ioana-Roxana	CA	IAC-21.A3.2B.6
Perrier, Ioana-Roxana	CA	IAC-21.A3.IP.32
Perrot, Lou	CA	IAC-21.A1.1.1
Persson, Olle	CA	IAC-21.E6.5-GTS.1.6
Persson, Olle	CA	IAC-21.B4.9-GTS.5.9
Persson, Olle	CA	IAC-21.B2.7.8
Pesacane, Ottavio	CA	IAC-21.A6.9.8
Pesaresi, Cristiano	CA	IAC-21.B5.2.3
Pessoa, Ana Gabriela	CA	IAC-21.E1.3.12
Pessôa-Lopes, I.	A	IAC-21.E6.4.10
Pestov, Dmitriy	CA	IAC-21.A2.1.6
Petelin, Dmitrii	CA	IAC-21.B3.5.2
Peter, Deepthi	CA	IAC-21.D5.4.4
Peters, Taylor	CA	IAC-21.A1.8.9
Peters, Taylor	CA	IAC-21.A2.7.3
Petersen, Elisabeth	CA	IAC-21.A6.1.10
Peterson, Samuel	A	IAC-21.B6.1.12
Peterson, Timothy	A	IAC-21.A6.IP.10
Petit, David	CA	IAC-21.A6.1.10
Petrak, Andreas	CA	IAC-21.B6.1.8
Petrak, Andreas	CA	IAC-21.B6.2.7

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Name	Role	Paper
Petrenko, Valerii	CA	IAC-21.A1.IP.6
Petri, Jona	CA	IAC-21.D1.2.3
Petricca, Flavio	A	IAC-21.B4.8.9
Petronzio, Luca	CA	IAC-21.B5.2.3
Petrovic, Stacha	CA	IAC-21.E5.IP.6
Petrovichev, Victor	CA	IAC-21.B3.8.10
Petrut, Andreea	CA	IAC-21.A1.4.4
Petterson, Henrik	CA	IAC-21.D2.2.6
Petterson, Henrik	CA	IAC-21.A2.3.7
Petukhov, Viacheslav	CA	IAC-21.C1.4.3
Pezowicz, Piotr	CA	IAC-21.D3.2A.4
Pfaff, Aron	CA	IAC-21.C2.5.4
Pfeilsticker, Klaus	CA	IAC-21.A7.1.5
Piacquadio, Stefano	CA	IAC-21.D2.7.7
Pianorsi, Mattia	CA	IAC-21.D4.5.1
Picard, Martin	CA	IAC-21.A5.1.5
Picard, Yann	CA	IAC-21.E3.4.2
Picariello, William	CA	IAC-21.A3.IP.38
Picci, Niccolò	CA	IAC-21.B4.3.11
Picci, Niccolò	CA	IAC-21.A6.10-B6.5.9
Picci, Niccolò	A	IAC-21.B2.7.8
Piccinin, Margherita	CA	IAC-21.B4.7.13
Piccinin, Margherita	A	IAC-21.B6.3.5
Piccinin, Margherita	A	IAC-21.A3.4B.8
Piccirillo, Sara	CA	IAC-21.E1.2.5
Pickard, Aaron	CA	IAC-21.D5.4.5
Picken, Stephen	CA	IAC-21.C2.4.9
Picozzi, Riccardo	CA	IAC-21.E1.5.11
Picton, Kevin	CA	IAC-21.A3.2B.9
Piechaczek, Szymon	CA	IAC-21.A6.1.7
Piechaczek, Szymon	CA	IAC-21.B6.1.5
Piergentili, Fabrizio	CA	IAC-21.B4.1.9
Piergentili, Fabrizio	CA	IAC-21.C2.6.1
Piergentili, Fabrizio	CA	IAC-21.B4.9-GTS.5.5
Piergentili, Fabrizio	CA	IAC-21.A6.10-B6.5.9
Pietrasiak, Nicole	CA	IAC-21.A1.7.4
Pietruszewska, Róża	CA	IAC-21.C2.7.11
Pietruszewska, Róża	CA	IAC-21.B4.6B.7
Pigassou, Marion	CA	IAC-21.D3.2B.7
Piguet, Luc	CA	IAC-21.E3.4.2
Pik, Raphaël	CA	IAC-21.A3.IP.62
Pikalov, Konstantin	CA	IAC-21.A1.2.2
Pilato, Giuseppe	CA	IAC-21.B4.2.12
Pilato, Giuseppe	CA	IAC-21.A3.2A.5
Pilchen, Guy	CA	IAC-21.D2.1.4
Pilgar, Rutuja	CA	IAC-21.A3.IP.41
Pilgar, Rutuja	CA	IAC-21.A3.5.8
Pillai, Ramlingam Gyanasampath	CA	IAC-21.D3.1.2
Pillet, Nicolas	CA	IAC-21.A6.4.2
Pilvet, Maris	CA	IAC-21.C3.4.7
Pina, Megan	CA	IAC-21.E1.3.12
Pinard, Adrien	CA	IAC-21.E2.3-GTS.4.16
Pineda Alfaro, Eduardo	CA	IAC-21.D4.3.1
Pineda Alfaro, Eduardo	CA	IAC-21.E6.2.9
Pineda Alfaro, Eduardo	CA	IAC-21.E3.6.2
Pinelli, Andrea	CA	IAC-21.A3.3A.7
Pinna, Gian Maria	CA	IAC-21.A6.1.11
Pino, Josep	CA	IAC-21.B6.2.3
Pino, Paolo	CA	IAC-21.E7.1.8
Pino, Paolo	A	IAC-21.A5.1.10
Pino, Paolo	CA	IAC-21.D3.1.8
Pino, Paolo	CA	IAC-21.A1.IP.20
Pino, Paolo	A	IAC-21.C3.4.10
Pinto, Gabriel	CA	IAC-21.A3.2C.15
Pinzón, Andrés	CA	IAC-21.B4.IP.15
Piper, Samuel	CA	IAC-21.A2.7.1
Piqueras, Miguel Angel	CA	IAC-21.B2.4.5
Piragino, Antonio	CA	IAC-21.C4.5.7
Piragino, Antonio	CA	IAC-21.C4.5.12
Piras, Annamaria	A	IAC-21.B3.2.4
Piras, Annamaria	A	IAC-21.B3.8.4
Piras, Michela	CA	IAC-21.A3.IP.38
Pirat, Camille	CA	IAC-21.B2.3.6
Piro, Anthony	A	IAC-21.A1.8.9
Piro, Anthony	CA	IAC-21.A2.7.3

Name	Role	Paper
Pirollo, Carlo	CA	IAC-21.A3.IP.38
Pirrotta, Simone	CA	IAC-21.B4.3.11
Pirrotta, Simone	CA	IAC-21.A6.10-B6.5.9
Pisot, Nathalie	CA	IAC-21.B1.2.9
Pistillo, Pasquale	CA	IAC-21.B5.2.3
Pitarresi, Antonino	CA	IAC-21.E2.3-GTS.4.7
Pitkänen, Lauri	CA	IAC-21.A2.6.2
Pitz, Wolfgang	CA	IAC-21.B3.3.7
Piunti, Matteo	CA	IAC-21.A3.3A.7
Pizzarelli, Marco	CA	IAC-21.C4.3.5
Pizzarelli, Marco	CA	IAC-21.C2.5.7
Pizzi, Sara	CA	IAC-21.B2.1.2
Pizzurro, Simone	CA	IAC-21.D2.3.8
Plattard, Serge	A	IAC-21.E3.3.6
Pleban, Konrad	CA	IAC-21.B1.3.5
Pleintinger, Benedikt	CA	IAC-21.A3.1.7
Plevier, Camiel	CA	IAC-21.B4.8.5
Poch, Olivier	CA	IAC-21.A7.3.7
Podgorski, Mikolaj	A	IAC-21.B1.3.5
Podwin, Agnieszka	CA	IAC-21.A2.7.6
Poeschl, Thomas	CA	IAC-21.A3.2A.11
Pommerol, Antoine	CA	IAC-21.A7.3.7
Ponce, Hiram	CA	IAC-21.C1.3.8
Pont, Gabriel	A	IAC-21.A3.3B.2
Pontani, Mauro	A	IAC-21.C1.1.14
Pontani, Mauro	CA	IAC-21.C1.2.12
Pontani, Mauro	A	IAC-21.C1.5.12
Pontani, Mauro	CA	IAC-21.C1.6.2
Ponti, Fabrizio	CA	IAC-21.C4.6.3
Pop, Virgiliu	A	IAC-21.E1.IP.2
Pop, Virgiliu	A	IAC-21.E4.2.7
Popov, Garri	CA	IAC-21.C4.6.8
Porat, Itay	CA	IAC-21.E1.3.12
Porta, Valerio	CA	IAC-21.E5.4.10
Posada, Julio	CA	IAC-21.E1.8.4
Pothina, Harika	A	IAC-21.E2.1.3
Potter, Seth	CA	IAC-21.C3.2.2
Potter, Simon	CA	IAC-21.E6.2.1
Potter, Simon	CA	IAC-21.A6.8-E9.1.3
Pourdaraei, Sara	A	IAC-21.B2.1.7
Pousse, Alexandre	CA	IAC-21.C1.6.10
Pouwels, Charlotte	A	IAC-21.A3.2B.17
Pouwels, Charlotte	CA	IAC-21.A3.2B.6
Pouwels, Charlotte	CA	IAC-21.E2.3-GTS.4.14
Powell, Cheyenne	A	IAC-21.B6.2.8
Pozzato, Nicola	CA	IAC-21.D1.3.4
Pozzi, Chiara	CA	IAC-21.A3.IP.38
Pracejus, Bernhard	CA	IAC-21.E2.1.9
Pradal, Robin	CA	IAC-21.E3.4.2
Pramann, Brian	CA	IAC-21.A3.3A.1
Prasad, Pallavi	CA	IAC-21.B1.4.4
Prasad, V Nuthan	CA	IAC-21.A3.IP.28
Prat Boubeta, Lorenzo	CA	IAC-21.B3.5.7
Pratomo, Bina	A	IAC-21.D5.1.2
Preda, Valentín	CA	IAC-21.C1.8.1
Prem, Parvathy	CA	IAC-21.E3.2.5
Prest, Maria Vittoria	CA	IAC-21.E7.7.7
Prevereaud, Ysolde	CA	IAC-21.D2.3.1
Prevereaud, Ysolde	CA	IAC-21.D2.4.6
Price, Daniel	CA	IAC-21.A4.1.7
Price, Mark C.	CA	IAC-21.A1.6.2
Prieto Panadero, Eloy	CA	IAC-21.E5.IP.6
Prince, John	CA	IAC-21.E1.3.12
Prinnetto, Jacopo	CA	IAC-21.A3.3A.9
Prinnetto, Jacopo	CA	IAC-21.D3.2A.6
Prinnetto, Jacopo	CA	IAC-21.B4.7.13
Prinnetto, Jacopo	CA	IAC-21.A3.4B.4
Pritykin, Dmitry	A	IAC-21.A6.1.1
Pritykin, Dmitry	CA	IAC-21.C1.1.3
Pritykin, Dmitry	CA	IAC-21.C1.9.2
Proietti, Simone	CA	IAC-21.B2.6.2
Promper, Wolfgang	CA	IAC-21.A6.6.2
Propst, Martin	CA	IAC-21.C4.1.6
Propst, Martin	A	IAC-21.C4.2.8
Proroka, Vladyslav	CA	IAC-21.E1.3.11

Name	Role	Paper
Prunerì, Valerio	CA	IAC-21.B4.7.1
Przybyła, Bartos	CA	IAC-21.A1.5.4
Przybylska, Agnieszka	CA	IAC-21.B1.3.5
Prüfer, Sven	CA	IAC-21.B3.4-B6.4.9
Prüfer, Sven	CA	IAC-21.B6.2.7
Puccinelli, Elia	CA	IAC-21.C4.8-B4.5A.2
Pulcino, Vincenzo	CA	IAC-21.B4.4.3
Pulice, Mauro	CA	IAC-21.E2.3-GTS.4.7
Pulker, Stephen	CA	IAC-21.A3.3A.5
Pullia, Marco	CA	IAC-21.A1.5.3
Punta, Elisabetta	CA	IAC-21.C1.8.1
Punzo, Francesco	A	IAC-21.C2.4.3
Pupillo, Giuseppe	CA	IAC-21.A6.9.11
Puppa, Andrea	CA	IAC-21.A6.7.4
Purio, Mark Angelo	CA	IAC-21.B4.3.3
Purio, Mark Angelo Cabrera	CA	IAC-21.C3.3.1
Purnell, Joseph	CA	IAC-21.A3.2B.9
Purohit, Narashima	CA	IAC-21.D3.2B.7
Purpura, Giovanni	A	IAC-21.A6.7.9
Purvis, Benjamin	A	IAC-21.E2.4.16
Purvis, Cyndl	CA	IAC-21.E2.4.16
Purvis, Nina	A	IAC-21.A1.IP.16
Pushparaj, Nishanth	CA	IAC-21.C1.5.1
Pushparaj, Nishanth	A	IAC-21.C1.5.2
Pust, Michael	CA	IAC-21.B4.6B.6
Putrevu, Pranay	CA	IAC-21.B2.1.10
Putzar, Robin	CA	IAC-21.A6.1.4
Pätschke, Susann	CA	IAC-21.D1.2.3
Påhlsson, Philip	A	IAC-21.D2.2.6
Pérez Cámara, Flavia	CA	IAC-21.A2.5.5
Pérez Hernández, Cristina	CA	IAC-21.A6.1.11
Pöhlmann, Robert	CA	IAC-21.A5.3-B3.6.5

Q

Qedar, Ran	CA	IAC-21.B4.6B.1
Qu, Guangji	CA	IAC-21.C1.IP.14
Quadbeck, Peter	CA	IAC-21.A3.2C.18
Quercia, Tatiana	CA	IAC-21.D4.5.1
Quercia, Tatiana	CA	IAC-21.C2.9.9
Quimbaya, Fabio	CA	IAC-21.D3.2A.12
Quirino, Matteo	CA	IAC-21.B4.7.13
Quirino, Matteo	CA	IAC-21.A3.4B.8
Quiroga Ruiz, Carlos Fernando	CA	IAC-21.B4.IP.15
Quizzagan, Harlee	A	IAC-21.E3.2.11

R

R, Aditya	A	IAC-21.C1.IP.1
R, Supreeth	CA	IAC-21.C4.3.2
R, Vasudevan	CA	IAC-21.C4.1.2
R, Vasudevan	CA	IAC-21.C4.2.7
R, Vasudevan	CA	IAC-21.C4.IP.6
Raadik, Taavi	CA	IAC-21.C3.4.7
Rabagliati, Lorenzo	CA	IAC-21.A5.1.10
Rabagliati, Lorenzo	CA	IAC-21.A1.IP.20
Rabin, Julien	CA	IAC-21.C4.5.5
Rachidi, Tajjeeddine	CA	IAC-21.B4.1.11
Rachkin, Dmitry	CA	IAC-21.E2.4.8
Rachkin, Dmitry	A	IAC-21.B4.6B.10
Racioppa, Paolo	CA	IAC-21.B2.6.2
Racioppa, Paolo	CA	IAC-21.B4.9-GTS.5.1
Radstake, Eline	CA	IAC-21.A3.IP.32
Rady, Toby	CA	IAC-21.E5.4.7
Rafalskiy, Dmytro	CA	IAC-21.C4.6.6
Rafano Carnà, Simone	CA	IAC-21.C1.5.8
Raghavan, Dharini	CA	IAC-21.C4.5.3
Raghavan, Dharini	CA	IAC-21.E1.9.5
Raharijaona, Ambre	CA	IAC-21.C2.2.6
Raharijaona, Ambre	CA	IAC-21.B4.IP.10
Rahloff, Tobias	CA	IAC-21.D5.4.5
Raimalwala, Kaizad	A	IAC-21.A3.2B.8
Raines, Sami	CA	IAC-21.E5.4.7
Raizonville, Philippe	CA	IAC-21.A7.1.5
Raj, Harshit	CA	IAC-21.D4.1.8

Name	Role	Paper
Raj, Harshit	CA	IAC-21.A2.2.14
Raj, Harshit	CA	IAC-21.A2.5.7
Raj, Nischith	A	IAC-21.D4.1.8
Raj, Nischith	CA	IAC-21.A2.2.14
Raja, Anand	CA	IAC-21.C2.4.9
Rajput, Siddharth	CA	IAC-21.E5.4.7
Raksat, Ponlawoot	CA	IAC-21.A3.IP.19
Ramadan, AbuBakr	CA	IAC-21.A3.IP.37
Ramayanti, Sri	CA	IAC-21.C2.1.3
Rambaldi, Riccardo	CA	IAC-21.E1.5.11
Ramesh, Sai Vishal	CA	IAC-21.C1.9.4
Ramirez Arana, Sofia	CA	IAC-21.A2.6.4
Ramirez Lopez, Liliana Maricarmen	A	IAC-21.C2.4.1
Ran, Wang	A	IAC-21.C1.IP.14
Rana, Loveneesh	A	IAC-21.D1.1.7
Rana, Loveneesh	A	IAC-21.D3.1.2
Rana, Loveneesh	A	IAC-21.D1.4A.9
Ranasinghe, Samitha	CA	IAC-21.E2.3-GTS.4.2
Rane, Nishant	CA	IAC-21.C2.5.9
Rane, Nishant	CA	IAC-21.D2.9-D6.2.5
Rang, Seongmin	CA	IAC-21.C4.4.7
Ranjan, Rakesh	CA	IAC-21.A2.5.7
Ranjan Saxena, Neelesh	A	IAC-21.A3.IP.23
RAO, SANDhYA	A	IAC-21.D4.2.9
RAO, SANDhYA	A	IAC-21.C2.5.3
RAO, SANDhYA	A	IAC-21.A1.IP.4
RAO, SANDhYA	A	IAC-21.D1.IP.1
RAO, SANDhYA	A	IAC-21.D1.IP.2
RAPP, Lucien	A	IAC-21.E7.4.4
Rast, Michael	CA	IAC-21.B1.2.8
Rath, Andreas	CA	IAC-21.B2.5.7
Rathnasabapathy, Minoo	A	IAC-21.A6.8-E9.1.3
Rathod, Akash	CA	IAC-21.E2.3-GTS.4.11
Rathor, Maheshwari	CA	IAC-21.E2.4.12
Rauer, Heike	CA	IAC-21.A3.1.2
Rauer, Heike	CA	IAC-21.A3.2A.3
Rauer, Heike	CA	IAC-21.D3.1.11
Ravanis, Eleni	CA	IAC-21.E3.2.5
Ravasz, Mate	CA	IAC-21.A1.7.4
Ravel, Karen	CA	IAC-21.A3.3B.4
Ravin, Rahul	CA	IAC-21.A2.7.8
Ray, Kenneth	CA	IAC-21.B1.IP.12
Ray, Kenneth	CA	IAC-21.B1.5.15
Razgus, Bronislovas	CA	IAC-21.D2.6.2
Razo, Derek	CA	IAC-21.D4.5.8
Reagan, Shawn	CA	IAC-21.A2.7.2
Rebele, Bernhard	CA	IAC-21.A3.2A.3
Reddy Pappula, Bharath Simha	CA	IAC-21.D1.IP.3
Redondo Gutierrez, Jose Luis	CA	IAC-21.A3.2B.3
Redondo Gutierrez, Jose Luis	CA	IAC-21.D2.6.2
Reed, Heather	CA	IAC-21.A3.3A.1
Reed, Heather	CA	IAC-21.A3.3B.1
Reershemius, Siebo	CA	IAC-21.D2.6.1
Rees, Jean-Michel	CA	IAC-21.A3.3B.2
Regules, Alvaro	CA	IAC-21.E1.2.2
Regules, Alvaro	CA	IAC-21.E1.3.6
Regules, Alvaro	A	IAC-21.A2.2.8
Regules, Alvaro	CA	IAC-21.A2.2.10
Regules, Alvaro	CA	IAC-21.A5.3-B3.6.10
Regules, Alvaro	CA	IAC-21.A1.IP.13
Regules, Alvaro	CA	IAC-21.B4.IP.3
Regules, Alvaro	CA	IAC-21.E5.IP.12
Regules, Alvaro	A	IAC-21.E1.9.11
Rehmatullah, Faizan	CA	IAC-21.A3.3A.5
Reid, Ewan	CA	IAC-21.A3.2B.8
Reid, Jack	A	IAC-21.B5.2.5
Reid, Jack	CA	IAC-21.B1.5.8
Reill, Josef	CA	IAC-21.A3.2A.3
Reill, Josef	CA	IAC-21.A3.4A.8
Reilly, Hannah	CA	IAC-21.A3.2B.6
Reilly, Hannah	A	IAC-21.A3.IP.14
Reilly, Hannah	CA	IAC-21.A3.IP.32
Reilly, Hannah	CA	IAC-21.A3.2C.15
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Romero, Marco Filipe	A	IAC-21.E5.5.3
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Rometsch, Flavie Aditya Annick Suzanne Davida Tohotaua	CA	IAC-21.B3.6-A5.3.1

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Sarego, Giulia	CA	IAC-21.A6.3.6
Sarego, Giulia	CA	IAC-21.A6.5.2
Sarego, Giulia	A	IAC-21.C1.9.6
Saremi, Setareh	A	IAC-21.A3.1.9
Sargeant, Hannah	CA	IAC-21.A3.2A.11
Sargeant, Hannah	CA	IAC-21.A3.IP.43
Sarica, Danilo	A	IAC-21.B4.7.1
Sarille Cadenas, Carlos	CA	IAC-21.B4.2.9
Sarli, Bruno	A	IAC-21.C1.4.5
Sarmiento, German	CA	IAC-21.D3.2A.12
Sarnoff, Isaac	A	IAC-21.D5.3.4
Sarritzu, Alberto	CA	IAC-21.D2.3.12
Sarritzu, Alberto	CA	IAC-21.D6.2-D2.9.4
Sasada, Takeshi	CA	IAC-21.B2.4.14
Sasaki, Hiroshi	A	IAC-21.B3.1.3
Sasaki, Kenichi	A	IAC-21.B1.4.1
Sateesh, Dhanisha	A	IAC-21.A5.IP.5
Sateesh, Dhanisha	CA	IAC-21.C4.9.9
Sato, Kavin	CA	IAC-21.B3.3.2
Sato, Yuji	CA	IAC-21.B4.3.7
Satoh, Naoki	CA	IAC-21.A5.1.5
Satou, Yasutaka	CA	IAC-21.C2.1.9
Sauer, Markus	CA	IAC-21.B2.1.9
Sauer, Markus	A	IAC-21.B2.2.7
Sauer, Pascal	A	IAC-21.A6.7.3

Name	Role	Paper
Savage, Nigel	CA	IAC-21.E1.4.8
Savage-Briz, Alejandra	CA	IAC-21.D1.4B.7
Savinkina, Alexandra	CA	IAC-21.A1.1.3
Savinkov, Vasily	CA	IAC-21.B3.3.2
Savinkov, Vasily	CA	IAC-21.B3.3.7
Savinkov, Vasily	CA	IAC-21.B3.3.8
Savino, Raffaele	CA	IAC-21.C2.4.3
Savino, Raffaele	CA	IAC-21.A2.3.2
Savva, Katie	A	IAC-21.E1.4.8
Sawai, Shujiro	CA	IAC-21.A2.4.4
Saxena, Mridul	CA	IAC-21.C2.3.9
Saxena, Mridul	CA	IAC-21.C2.IP.1
Saxena, Mridul	A	IAC-21.C2.IP.9
Sayaka, Kose	CA	IAC-21.B4.9-GTS.5.7
Sayed, Mostafa	CA	IAC-21.E1.1.8
Sayers, Renae	CA	IAC-21.B5.2.16
Scaccia, Aldo	A	IAC-21.D2.4.2
Scaffidi Lallaro, Marco	A	IAC-21.C1.3.3
Scala, Francesca	CA	IAC-21.B4.2.7
Scala, Francesca	A	IAC-21.C1.1.5
Scalia, Tanya	A	IAC-21.A1.4.1
Scalia, Tanya	A	IAC-21.C2.5.7
Scalia, Tanya	A	IAC-21.D5.4.2
Scalzi, Davide	CA	IAC-21.C4.5.9
Scannapieco, Antonio	CA	IAC-21.B1.4.4
Scapigliati, Giuseppe	CA	IAC-21.A5.1.13
Scarlattella, Giuseppe	A	IAC-21.D2.5.8
Scarlattella, Giuseppe	CA	IAC-21.D6.2-D2.9.4
Scarpisi, Floriana	CA	IAC-21.A5.1.10
Scarpisi, Floriana	A	IAC-21.A1.IP.20
Scarselli, Marco	CA	IAC-21.E1.2.7
Scatena, Lorenzo	CA	IAC-21.B5.1.15
Scatena, Lorenzo	CA	IAC-21.E6.1.11
Schafer, Ewan	CA	IAC-21.A6.6.2
Scharnagl, Julian	CA	IAC-21.B4.3.6
Scharnagl, Julian	CA	IAC-21.B4.4.6
Scharnagl, Julian	A	IAC-21.B4.7.8
Scharnagl, Julian	CA	IAC-21.D1.4B.8
Scharnagl, Julian	CA	IAC-21.C1.8.2
Scharring, Stefan	CA	IAC-21.A6.6.2
Schauer, Rylee	CA	IAC-21.A2.7.2
Schechner, Yoav	CA	IAC-21.B4.4.6
Scheeres, Daniel	CA	IAC-21.C1.3.1
Scheeres, Daniel	CA	IAC-21.C1.3.12
Schenker, Eran	CA	IAC-21.D1.2.4
Schervan, Thomas A.	CA	IAC-21.C2.1.12
Schettino, Giulia	CA	IAC-21.A6.2.3
Scheufler, Henning	CA	IAC-21.D2.6.1
Schiavon, Alessandro	CA	IAC-21.C4.5.9
Schiavon, Matteo	CA	IAC-21.B4.7.1
Schiel, Jeremy	CA	IAC-21.E7.3.4
Schiel, Jeremy	CA	IAC-21.B4.6A.9
Schildknecht, Thomas	CA	IAC-21.A6.1.6
Schildknecht, Thomas	CA	IAC-21.E3.4.2
Schilling, Klaus	CA	IAC-21.D1.1.2
Schilling, Klaus	CA	IAC-21.B4.3.6
Schilling, Klaus	CA	IAC-21.B4.3.12
Schilling, Klaus	CA	IAC-21.B4.4.6
Schilling, Klaus	CA	IAC-21.B4.7.8
Schilling, Klaus	CA	IAC-21.D1.4B.8
Schilling, Klaus	CA	IAC-21.C1.8.2
Schilling, Klaus	A	IAC-21.D5.4.1
Schimmerohn, Martin	A	IAC-21.A6.1.4
Schimmerohn, Martin	CA	IAC-21.A6.3.5
Schinger, Jessy Kate	CA	IAC-21.E7.2.6
Schinger, Jessy Kate	CA	IAC-21.D4.5.7
Schinger, Jessy Kate	CA	IAC-21.D4.5.8
Schirg, Florian	CA	IAC-21.A3.1.11
Schirone, Luigi	CA	IAC-21.C1.9.4
Schirrippa Spagnolo, Aldo	A	IAC-21.A3.3B.3
Schlacht, Irene Lia	CA	IAC-21.A3.2B.6
Schlarmann, Leander	CA	IAC-21.A3.2B.6
Schleutker, Thorn	CA	IAC-21.D2.3.1
Schlosser, Karoly	A	IAC-21.A1.4.4
Schlosser, Karoly	A	IAC-21.A1.4.5



Name	Role	Paper
Schlosser, Karoly	A	IAC-21.A1.4.15
Schlutz, Juergen	CA	IAC-21.B3.1.2
Schlutz, Juergen	CA	IAC-21.B3.6-A5.3.1
Schmalz, Sergei	CA	IAC-21.A6.1.13
Schmidt, Alexander	CA	IAC-21.D2.6.2
Schmidt, Jens	A	IAC-21.C4.6.1
Schmiel, Tino	CA	IAC-21.D6.2-D2.9.4
Schmierer, Christian	CA	IAC-21.D2.7.3
Schmitz, Nicole	CA	IAC-21.A3.2A.3
Schneider, Anton	CA	IAC-21.D2.6.1
Schneider, Scott	CA	IAC-21.B5.2.4
Schneider, Scott	CA	IAC-21.E5.4.9
Schneider, Scott	A	IAC-21.E7.7.5
Schneider, Scott	CA	IAC-21.E7.7.5
Schnellbacher, Hanjo	CA	IAC-21.A6.7.3
Schoen, Andreas	CA	IAC-21.B3.3.8
Schoenmaekers, Catho	CA	IAC-21.B3.9-GTS.2.7
Schoenmaekers, Catho	A	IAC-21.B3.9-GTS.2.8
Schonenborg, Rogier	CA	IAC-21.A3.2A.9
Schonenborg, Rogier	CA	IAC-21.A3.2A.10
Schoonejans, Philippe	CA	IAC-21.A3.3A.4
Schoppmann, Kathrin	CA	IAC-21.D2.6.3
Schrage, Thomas	A	IAC-21.A3.IP.22
Schroeder, Susanne	CA	IAC-21.A3.2A.3
Schröder, Kai-Uwe	CA	IAC-21.C2.1.12
Schröder, Silvio	CA	IAC-21.D2.6.1
Schröder, Susanne	CA	IAC-21.A3.1.7
Schröder, Susanne	CA	IAC-21.A3.2A.11
Schubert, Peter	A	IAC-21.D3.2A.9
Schubert, Peter	A	IAC-21.C3.5-C4.10.8
Schuetler, Tobias	CA	IAC-21.E1.2.3
Schulte, Peter	A	IAC-21.C1.2.8
Schumacher, Johannes	CA	IAC-21.B2.4.4
Schuring, Iris	CA	IAC-21.A3.2B.6
Schuster, Martin	CA	IAC-21.A3.2A.3
Schuster, Martin J.	CA	IAC-21.A5.3-B3.6.5
Schwarz, Benjamin	CA	IAC-21.D3.2A.8
Schwarz, René	CA	IAC-21.D2.6.1
Schwarz, Shirir	CA	IAC-21.A1.5.4
Schwenk, Kurt	CA	IAC-21.C1.1.4
Schwentenwein, Martin	CA	IAC-21.C2.5.10
Schäfer, Felix	A	IAC-21.B4.IP.13
Schäfer, Felix	CA	IAC-21.A2.5.8
Schäfer, Felix	CA	IAC-21.B4.5A-C4.8.4
Schäfer, Felix	CA	IAC-21.B4.9-GTS.5.5
Schäfer, Frank	CA	IAC-21.A6.1.4
Schäff, Sven	CA	IAC-21.C4.5.12
Sciarra, Marcello	CA	IAC-21.C1.5.8
Scimemi, Sam	CA	IAC-21.A3.1.12
Scimemi, Sam	CA	IAC-21.B3.1.6
Scimemi, Sam	CA	IAC-21.B3.3.2
Scimone, Dario	CA	IAC-21.E1.5.11
Sciortino, Giacomo Primo	A	IAC-21.E3.3.4
Scipioni, Manuele	CA	IAC-21.C3.4.8
Scorsoglio, Andrea	CA	IAC-21.C1.4.7
Scott, Christopher	CA	IAC-21.B3.7.1
Scott, Jonathan	CA	IAC-21.B3.7.1
Scoubeau, Mehdi	A	IAC-21.B4.8.5
Seedhouse, Erik	CA	IAC-21.A1.1.7
Seehanam, Saran	A	IAC-21.A3.IP.19
Seel, Fabian	CA	IAC-21.A3.1.7
Seelbinder, David	CA	IAC-21.D2.6.1
Seelbinder, David	CA	IAC-21.D2.6.2
Segna, Carlotta	CA	IAC-21.E2.3-GTS.4.7
Seidel, Achim	A	IAC-21.A3.2C.18
Seifert, Bernhard	CA	IAC-21.C4.6.13
Seifert, Bernhard	CA	IAC-21.C4.6.14
Seifert, Bernhard	CA	IAC-21.C4.9.3
Seitzer, Patrick	CA	IAC-21.B4.3.11
Seitzer, Patrick	CA	IAC-21.A6.10-B6.5.9
Sejera, Marloun	CA	IAC-21.B4.IP.21
Sekine, Tatsuyuki	CA	IAC-21.B1.4.1
Selbmann, Alex	CA	IAC-21.C4.1.6
Sellers, Jerry	A	IAC-21.D1.4B.1
Selman, Leah	CA	IAC-21.A2.7.2

Name	Role	Paper
Selmo, Antonio	CA	IAC-21.C4.5.9
Selmo, Antonio	CA	IAC-21.B2.5.1
Selmo, Antonio	CA	IAC-21.B4.6A.10
Seltikova, Ekaterina	CA	IAC-21.A5.1.10
Seltikova, Ekaterina	CA	IAC-21.A3.2C.6
Seminari, Simon	CA	IAC-21.A3.1.1
Seminari, Simon	CA	IAC-21.A6.8-E9.1.11
Semones, Edward J.	CA	IAC-21.A1.5.4
Senesky, Debbie	CA	IAC-21.E5.1.7
Seo, Daeban	CA	IAC-21.D2.7.6
Seo, Mansu	A	IAC-21.B6.IP.10
Sepehrband, Farshid	CA	IAC-21.B3.8.10
Septi Jayani, Ade Putri	CA	IAC-21.B6.IP.9
Serfontein, Zaria	CA	IAC-21.E1.4.8
Sergey, Posokhov	CA	IAC-21.A1.2.2
Serna, Elsa	CA	IAC-21.A3.1.9
Serna, Elsa	CA	IAC-21.E2.3-GTS.4.12
Serov, Mikhail	A	IAC-21.B1.2.11
Serra, Jean-Jacques	CA	IAC-21.E4.2.1
Serra, Luigi	CA	IAC-21.E1.5.11
Serrano, Ignacio	CA	IAC-21.E2.3-GTS.4.9
Serrano, Miguel Ángel	CA	IAC-21.E1.2.2
Serrano, Miguel Ángel	CA	IAC-21.E1.3.6
Serrano, Miguel Ángel	CA	IAC-21.A2.2.8
Serrano, Miguel Ángel	A	IAC-21.A2.2.10
Serrano, Miguel Ángel	CA	IAC-21.A5.3-B3.6.10
Serrano, Miguel Ángel	A	IAC-21.A1.IP.13
Serrano, Miguel Ángel	CA	IAC-21.B4.IP.3
Serrano, Miguel Ángel	CA	IAC-21.E5.IP.12
Serrano, Miguel Ángel	CA	IAC-21.E1.9.11
Serrano Baza, César Augusto	CA	IAC-21.D4.2.5
Setiawan, Joga Dharma	CA	IAC-21.E5.4.3
Seto, Emily P.	CA	IAC-21.A5.2.13
Setty, Srinivas J.	CA	IAC-21.A6.6.2
Sever, Zvi	A	IAC-21.A1.8.16
Sgambati, Antonella	CA	IAC-21.A3.2A.16
Sgambati, Antonella	A	IAC-21.C2.5.10
Shadakshari, Anushree	CA	IAC-21.D4.1.8
Shah, Aadhya	CA	IAC-21.C2.6.3
Shah, Aahan	A	IAC-21.C2.3.9
Shah, Aahan	CA	IAC-21.C2.IP.1
Shah, Aahan	CA	IAC-21.C2.IP.9
Shahsavani, Sadaf	CA	IAC-21.A6.4.9
Shaikh, Ailan Ulla	CA	IAC-21.A2.5.7
Shaikh, Juber	CA	IAC-21.E2.3-GTS.4.11
Shaikh, Juber	CA	IAC-21.E2.4.14
Shaikh, Mubasshir	CA	IAC-21.E1.3.7
Shaikh, Mubasshir	CA	IAC-21.A3.3A.2
Shaikh, Muhammad Mubasshir	CA	IAC-21.B4.2.2
Shaikh, Muhammad Mubasshir	CA	IAC-21.B2.6.11
Shaker, Ahmed	CA	IAC-21.D1.1.4
Shakhibala, Vishnuvardhan	CA	IAC-21.A3.3A.7
Shameer, Mohamed	CA	IAC-21.E2.1.9
Shamina, Anastasia	A	IAC-21.A2.2.9
Shanmugam, Monica	CA	IAC-21.D5.3.5
Shao, Zhijie	CA	IAC-21.D2.9-D6.2.6
Shar, Manny	CA	IAC-21.E6.2.1
Shar, Manny	CA	IAC-21.D2.7.4
Sharad, Anirudh	CA	IAC-21.D5.1.8
Sharaf, Ahmed	CA	IAC-21.A3.2C.17
Sharaf, Ahmed	A	IAC-21.C3.4.6
Sharaf, Marwa	CA	IAC-21.A3.IP.37
Sharaf, Omran	A	IAC-21.A3.3A.1
Sharaf, Omran	CA	IAC-21.E1.IP.10
Sharf, Inna	CA	IAC-21.C1.7.6
Sharif, Maryam	A	IAC-21.A6.1.8
Sharma, Aakansha	CA	IAC-21.A1.IP.7
Sharma, Abhishek	A	IAC-21.C4.2.6
Sharma, Shreyansh	A	IAC-21.A5.1.11
Sharma, Shreyansh	CA	IAC-21.B2.6.12
Sharma, Yukta	A	IAC-21.B3.IP.4
SHASHKOVA, Elizaveta	CA	IAC-21.D3.2A.5
Shauffer-Ellis, Lee	CA	IAC-21.A1.5.11
Shaw, Niamh	CA	IAC-21.E5.IP.6
Shawe, James Joseph	A	IAC-21.B6.2.3

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Name	Role	Paper
Shawyer, Roger	A	IAC-21.C3.1.5
Shawyer, Roger	A	IAC-21.C4.5.2
Shcheglov, Georgy	A	IAC-21.C3.1.7
Shcheglov, Georgy	A	IAC-21.E5.IP.7
Shcheglov, Georgy	CA	IAC-21.A6.6.1
She, Yucheng	CA	IAC-21.B4.6B.2
Shehaj, Endrit	A	IAC-21.B1.4.12
Shekhar, Saumya	CA	IAC-21.C4.4.4
Shelley, Alicia	CA	IAC-21.E6.1.11
Shengyi, JIN	A	IAC-21.B6.3.3
Sheridan, Simon	CA	IAC-21.A3.2A.8
Sheridan, Simon	CA	IAC-21.A3.2A.11
Shestakov, Sergey	CA	IAC-21.C1.3.9
Shet, Chaitra	CA	IAC-21.E2.4.14
Shi, Pingyan	CA	IAC-21.A3.3B.5
Shi, Pingyan	CA	IAC-21.B2.7.9
Shi, Pu	CA	IAC-21.C4.3.3
SHI, Xingjian	CA	IAC-21.A7.3.9
Shibuya, Yoshihiko	A	IAC-21.B4.3.7
Shikar, Alon	CA	IAC-21.E5.1.3
Shikar, Alon	CA	IAC-21.D1.2.4
Shiraiwa, Daijiro	A	IAC-21.C4.2.1
Shirakawa, Masaki	CA	IAC-21.B3.3.8
Shirasu, Kento	A	IAC-21.C4.8-B4.5A.3
Shiratama, Koichi	CA	IAC-21.B2.2.2
Shiratama, Koichi	CA	IAC-21.B2.2.4
Shirobokov, Maksim	A	IAC-21.C1.4.6
Shishkov, Boris	CA	IAC-21.B3.3.2
Shoer, Joseph	CA	IAC-21.B4.8.3
Shomshekova, Saule	CA	IAC-21.C2.6.11
Shrestha, Hari Ram	A	IAC-21.C3.3.1
Shuhail, Salem	CA	IAC-21.A7.2.8
Shuhail, Salem	A	IAC-21.A7.2.9
Shuham, Simon	A	IAC-21.E6.2.5
Shukla, Darsh	CA	IAC-21.A6.2.8
Shumeiko, Andrei	A	IAC-21.C4.5.8
Shumeiko, Andrei	A	IAC-21.B4.5A-C4.8.9
Shumilina, Irina	A	IAC-21.A1.IP.12
Shuping, Ralph	CA	IAC-21.A3.3B.1
Shuping, Ralph	CA	IAC-21.A3.IP.29
Shved, Dmitry	CA	IAC-21.A1.1.2
Shved, Dmitry	A	IAC-21.A1.1.3
Shwaiqi, Marwan A.	CA	IAC-21.E1.3.7
Shynkarenko, Olexiy	CA	IAC-21.C4.4.3
Shynkarenko, Olexiy	A	IAC-21.C4.7.10
Shyr, Megan	A	IAC-21.B3.4-B6.4.12
Si, Jiajia	CA	IAC-21.C3.4.2
Siarov, Stefan	A	IAC-21.D1.4B.2
Sicilia-Aguilar, Aurora	CA	IAC-21.A1.6.2
Sicsik, Aurélien	A	IAC-21.E2.3-GTS.4.16
Sidhana, Adwait	CA	IAC-21.A3.3A.10
Sidhana, Adwait	CA	IAC-21.A6.2.8
Sidhana, Adwait	CA	IAC-21.A3.5.1
Sidhu, Raveen	A	IAC-21.E4.1.2
Sidhu, Raveen	A	IAC-21.E1.8.1
Sidor, Adam	CA	IAC-21.C1.2.8
Sidorenko, Daria	CA	IAC-21.A1.2.8
Sieder-Katzmann, Jan	CA	IAC-21.C4.1.6
Sieder-Katzmann, Jan	CA	IAC-21.C4.2.8
Siemion, Andrew	CA	IAC-21.A4.1.1
Siemion, Andrew	CA	IAC-21.A4.1.7
Siemssen, Emilie Marley	CA	IAC-21.E3.4.2
Sijbers, Jan	CA	IAC-21.B3.8.10
Sil, Aleksander	CA	IAC-21.E2.3-GTS.4.1
Silva, Alberto	CA	IAC-21.B4.IP.15
Silva, Breno	CA	IAC-21.D2.5.14
Silva, Daniela	CA	IAC-21.E1.9.13
Silva, Nipuni	CA	IAC-21.E5.4.7
Silva, William	CA	IAC-21.E3.6.9
Silva-Martinez, Jackelynne	A	IAC-21.B6.3.7
Silverstone, Zoë	A	IAC-21.E5.4.7
Silvestrini, Stefano	CA	IAC-21.B4.7.13
Silvestrini, Stefano	CA	IAC-21.B6.3.5
Silwal, Abinash	CA	IAC-21.B1.5.9
Silwal, Abinash	CA	IAC-21.B1.5.10

Name	Role	Paper
Simakov, Sergei	CA	IAC-21.A6.5.6
Siminski, Jan	A	IAC-21.A6.1.11
Simmons, James	CA	IAC-21.E1.3.12
Simmons, Kevin	A	IAC-21.E1.2.1
Simmons, Kevin	CA	IAC-21.E2.4.4
Simmons, Kevin	CA	IAC-21.E2.4.16
Simmons, Kevin	CA	IAC-21.C2.6.3
Simmons, Kevin	CA	IAC-21.C3.IP.7
Simmons, Kevin	CA	IAC-21.GTS.5-B4.9.4
Simon, Jens	CA	IAC-21.C4.6.1
Simon, Xavier	CA	IAC-21.B3.8.12
Simone, Domenico	CA	IAC-21.C4.3.10
Simone, Domenico	CA	IAC-21.C4.4.12
Simonetti, Simone	CA	IAC-21.B3.4-B6.4.5
Simonetti, Simone	CA	IAC-21.B3.4-B6.4.5
Simonetti, Simone	CA	IAC-21.B3.4-B6.4.5
Simonetti, Simone	CA	IAC-21.B2.6.2
Simonetti, Simone	CA	IAC-21.B4.7.1
Simonetti, Simone	CA	IAC-21.B4.9-GTS.5.1
Simonetti, Simone	CA	IAC-21.B4.8.4
Simoni, Antonio	CA	IAC-21.C2.9.9
Simplicio, Pedro	CA	IAC-21.C1.1.6
Sinclair, Ethan	CA	IAC-21.C3.1.10
Sindoni, Elia	A	IAC-21.A3.5.2
Sindoni, Giampiero	CA	IAC-21.E5.4.10
Singer, Katrin	CA	IAC-21.E6.1.11
Singh, Abhishek	A	IAC-21.C3.4.9
Singh, Akash Kumar	CA	IAC-21.A5.1.11
Singh, Dushyant	CA	IAC-21.A3.3A.10
Singh, Dushyant	CA	IAC-21.A3.5.1
Singh, Harsh	CA	IAC-21.A6.2.8
Singh, Jaspreet	CA	IAC-21.A1.IP.7
Singh, Jaspreet	CA	IAC-21.D1.IP.3
Singh, Madhumita	CA	IAC-21.A2.2.14
Singh, Nandini	CA	IAC-21.C4.9.9
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Skvortsov, Vladimir	CA	IAC-21.C4.6.9
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Sleno, Nathalie	CA	IAC-21.A1.4.7
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Slocki, Dylan J.	CA	IAC-21.B4.8.10
Smal, Evan	CA	IAC-21.A3.2B.8
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Smirnov, Nickolay N.	A	IAC-21.A2.4.1
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Smirnova, Maria	CA	IAC-21.A2.2.1
Smirnova, Maria	CA	IAC-21.A2.2.3
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Smisek, Michal	CA	IAC-21.A3.2A.3
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Smith, Katharine	CA	IAC-21.C4.6.11
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Smithgall, Todd	CA	IAC-21.B3.9-GTS.2.3
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Soepper, Maximilian	CA	IAC-21.D2.7.7
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Solomakha, Andrii	A	IAC-21.A1.IP.6
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Songbai, Lai	CA	IAC-21.C2.3.3
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Suleiman, Bashir	CA	IAC-21.E2.1.9
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Sundaramoorthy, Prem	CA	IAC-21.B2.4.3
Suomela, Minka	CA	IAC-21.C4.3.9
Suomela, Minka	CA	IAC-21.A2.5.10
Supolkina, Natalya	A	IAC-21.A1.1.2
Supolkina, Natalya	CA	IAC-21.A1.1.3
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Taiano, Giorgio	CA	IAC-21.A3.4B.4
Tailhades, Sebastien	A	IAC-21.B1.2.8
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Tajmar, Martin	CA	IAC-21.D2.5.8
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Takahashi, Shota	A	IAC-21.C1.3.1
Takahashi, Takashi	CA	IAC-21.B2.2.8
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Takashi, Yamauchi	CA	IAC-21.C3.3.1
Takashi, Yamauchi	CA	IAC-21.B4.IP.21
Takashima, Takeshi	CA	IAC-21.C1.5.1
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Tzabari, Masada	CA	IAC-21.B4.4.6
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Uchiyama, Kenji	CA	IAC-21.C1.7.7
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Ulambayar, Tuguldur	CA	IAC-21.B4.1.6
Ulamec, Stephan	A	IAC-21.A3.4A.7
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Ulloa, Christopher	CA	IAC-21.A3.2C.15
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Uspenskii, Alexander	CA	IAC-21.C4.6.9
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Vasile, Massimiliano	CA	IAC-21.A6.1.2
Vasile, Massimiliano	CA	IAC-21.A6.9.3
Vasile, Massimiliano	CA	IAC-21.A6.4.4

Name	Role	Paper
Vasile, Massimiliano	CA	IAC-21.E2.4.2
Vasile, Massimiliano	CA	IAC-21.A6.2.10
Vasile, Massimiliano	CA	IAC-21.C1.5.3
Vasile, Massimiliano	A	IAC-21.C1.6.13
Vasile, Massimiliano	CA	IAC-21.A6.IP.9
Vasile, Massimiliano	CA	IAC-21.C1.7.1
Vasile, Massimiliano	CA	IAC-21.A5.4-D2.8.1
Vasile, Massimiliano	CA	IAC-21.D1.5.4
Vasilev, Fedor	CA	IAC-21.E2.3-GTS.4.3
Vasin, Andrey	CA	IAC-21.A1.3.8
Vasko, Christopher	A	IAC-21.B2.2.1
Vassilieva, Galina	CA	IAC-21.A1.2.2
Vassilieva, Galina	A	IAC-21.A1.2.8
Vaucher, Cicero. S.	CA	IAC-21.B2.4.3
Vayugundla, Mallikarjuna	CA	IAC-21.A3.2A.3
Vayuta, Maxim	CA	IAC-21.E2.3-GTS.4.3
Vaida, Pierre	CA	IAC-21.A1.2.5
Vecchiarelli, Pasquale	CA	IAC-21.C2.5.7
Vedeneev, Vasily	CA	IAC-21.A2.4.8
Vega Hernandez, Jose Manuel	CA	IAC-21.E1.6.2
Vela, Claudio	CA	IAC-21.C1.1.6
Velarde López de Ayala, Carmen	CA	IAC-21.C1.5.8
Velho, Rochelle	CA	IAC-21.E1.5.3
Velidi, Gurunadh	CA	IAC-21.D2.2.12
Velidi, Gurunadh	CA	IAC-21.C3.2.7
Velidi, Gurunadh	CA	IAC-21.B6.4-B3.4.4
Velidi, Gurunadh	CA	IAC-21.D5.3.5
Vellone, Matthew	CA	IAC-21.A2.7.2
Vellutini, Elena	CA	IAC-21.A6.2.3
Vellutini, Elena	CA	IAC-21.A6.7.7
Venkat, Hariharan	CA	IAC-21.B2.1.10
Venkat, Hariharan	CA	IAC-21.B2.4.12
Venkataraman, Arun Subramanian	CA	IAC-21.D4.1.9
Venkatesan, Jayakumar	CA	IAC-21.B1.5.6
Vennekens, Johan	CA	IAC-21.B4.2.12
Vennekens, Johan	CA	IAC-21.A3.2A.5
Vennik, Jai	CA	IAC-21.B4.6B.5
Vennitti, Andrea	CA	IAC-21.D6.2-D2.9.4
Ventre, Francesco	A	IAC-21.E1.5.11
Ventre, Francesco	CA	IAC-21.D3.2B.7
Ventura-Gonzalez, Daniel	CA	IAC-21.E1.3.14
Ventura-Gonzalez, Daniel	CA	IAC-21.A2.3.8
Ventura-Traveset, Javier	CA	IAC-21.B2.6.5
Ventura-Traveset, Javier	CA	IAC-21.B2.7.2
Verant, Jean-Luc	CA	IAC-21.D2.3.1
Vergoossen, Tom	CA	IAC-21.B4.6B.5
Verhoeven, Chris	CA	IAC-21.B2.4.3
Verma, Aditi	CA	IAC-21.E6.3.7
Verma, Anurag	A	IAC-21.B3.1.4
Verma, Maneesh Kumar	A	IAC-21.A3.2B.12
Verma, Maneesh Kumar	CA	IAC-21.E2.3-GTS.4.14
Verma, Mrityunjai	A	IAC-21.B3.5.1
Vermeulen, Angelo C.J.	CA	IAC-21.E5.1.1
Vermeulen, Nancy	CA	IAC-21.A3.2B.6
Vernazza, Pierre	CA	IAC-21.A3.4A.7
Vernazza, Pierre	CA	IAC-21.A3.4A.8
Vernile, Alessandra	A	IAC-21.E1.2.7
Vernile, Alessandra	A	IAC-21.B5.2.9
Vernillo, Paolo	CA	IAC-21.C2.4.3
Vernon, Steven	CA	IAC-21.D4.4.1
Vertadier, Héloïse	A	IAC-21.E7.2.6
Vertadier, Héloïse	CA	IAC-21.D4.5.7
Vertadier, Héloïse	A	IAC-21.D4.5.8
Vertolli, Nello	CA	IAC-21.A7.2.3
Vertuani, Davide	CA	IAC-21.C1.1.6
Vester, Corinna	CA	IAC-21.B6.1.12
Vesterberg, Johanna	CA	IAC-21.E6.5-GTS.1.6
Vestergaard, Jørgen	CA	IAC-21.B4.IP.24
Vettor, Andrea	A	IAC-21.B2.2.11
Vettor, Andrea	CA	IAC-21.B4.6A.11
Veziroglu, Kaan	CA	IAC-21.B4.2.2
Vial, Vanessa	A	IAC-21.C4.5.5
Vial, Vanessa	A	IAC-21.C4.5.6
Vial, Vanessa	A	IAC-21.D1.4A.6
Viale, Andrea	CA	IAC-21.C3.2.6

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Name	Role	Paper
Viards, Raphaël	CA	IAC-21.A3.3B.7
Vicario de Miguel, Gonzalo	CA	IAC-21.B6.2.9
Vidano, Simone	CA	IAC-21.C1.3.3
Vidano, Simone	CA	IAC-21.C1.8.1
Vidmar, Matjaz	A	IAC-21.D4.1.9
Vidmar, Matjaz	A	IAC-21.A1.7.4
Vigna, Luca	CA	IAC-21.B4.9-GTS.5.1
Vignaud, Pierre	CA	IAC-21.A3.5.2
Vijayakumaran, Nishani	CA	IAC-21.E1.5.11
Vijaykumar, Arjun	CA	IAC-21.A5.IP.5
Viladegut, Alan	CA	IAC-21.D2.7.7
Villa-Massone, Julien	CA	IAC-21.A3.2B.6
Villacieros, Belen	CA	IAC-21.E3.4.8
VILLAGRAN DE LEON, Juan Carlos	A	IAC-21.B1.6.8
Villano, Michelangelo	A	IAC-21.B1.2.7
Villanueva, David	A	IAC-21.E5.5.2
Villar, Aitor	CA	IAC-21.B4.6B.5
Villoresi, Paolo	CA	IAC-21.B4.7.1
Vinals, Jose Javier	CA	IAC-21.D1.6.5
Vincenzi, Aldo	CA	IAC-21.B5.2.3
Vinita Babu, K	A	IAC-21.A2.5.7
Vinière, Benoit	CA	IAC-21.E2.3-GTS.4.12
Vinière, Benoit	CA	IAC-21.A3.5.2
Vinod, Amal	CA	IAC-21.C4.3.9
Vinod Kumar, G.S.	CA	IAC-21.C2.IP.8
Viola, Nicole	CA	IAC-21.C4.7.1
Viola, Nicole	CA	IAC-21.D1.4A.4
Viridis, Mario	CA	IAC-21.C1.8.1
Virmontois, Cedric	CA	IAC-21.A3.2A.14
Virtanen, Pasi	CA	IAC-21.A2.6.2
Visser, Pieter	CA	IAC-21.C1.3.5
Vitali, Luca	CA	IAC-21.E2.3-GTS.4.7
Vitiello, Alessandro	A	IAC-21.C1.2.12
Vittori, Davide	A	IAC-21.E2.1.4
Vittori, Davide	A	IAC-21.B4.3.4
Vittori, Edoardo	CA	IAC-21.D4.5.1
Vizireanu, Alina	A	IAC-21.E1.1.8
Vizireanu, Alina	A	IAC-21.B1.5.6
Vizzi, Carlo	CA	IAC-21.B3.5.3
Viaskin, Anton	CA	IAC-21.D1.2.6
Vodermayer, Bernhard	CA	IAC-21.A3.1.7
Vodermayer, Bernhard	CA	IAC-21.A3.2A.3
Vodermayer, Bernhard	CA	IAC-21.A3.4A.8
Vogt, David	CA	IAC-21.A3.2A.11
Volohonsky, Gloria	CA	IAC-21.D1.2.4
Volpe, Angela	CA	IAC-21.B2.7.8
Volpe, Renato	CA	IAC-21.C1.3.10
von der Dunk, Frans	A	IAC-21.E7.2.15
von der Recke, Sabine	CA	IAC-21.D2.2.5
von Kampen, Peter	CA	IAC-21.A2.5.1
von Platen, Gustaf	CA	IAC-21.C4.3.9
Voore, Shreya	CA	IAC-21.E1.2.11
Voos, Holger	CA	IAC-21.D1.4A.11
Voos, Holger	CA	IAC-21.D1.IP.4
Voos, Holger	CA	IAC-21.D1.4B.5
Voos, Holger	CA	IAC-21.A3.2C.11
Voos, Holger	CA	IAC-21.D1.5.6
Vora, Amar	CA	IAC-21.B5.2.3
Voss, Matthew	CA	IAC-21.A6.7.5
Vrinceanu, Cristina	CA	IAC-21.E1.1.8
Vu, Huu Quan	CA	IAC-21.B4.6B.6
Vutukuri, Srikanish	A	IAC-21.C1.3.11
Vílchez Llamazares, Enol	CA	IAC-21.E2.3-GTS.4.4
Vílchez Llamazares, Enol	CA	IAC-21.B4.8.2
Völk, Stefan	CA	IAC-21.A3.2A.3
Völk, Stefan	CA	IAC-21.D2.6.3

W

Waclavicek, René	CA	IAC-21.A3.2A.16
Wager, Zac	A	IAC-21.D4.5.7
Wagner, Gerd	CA	IAC-21.A6.6.2
Wagner, Paul	CA	IAC-21.A6.6.2
Wahidi, Mohamad	CA	IAC-21.E2.3-GTS.4.14
Waid, Michael C.	CA	IAC-21.B3.3.2

Name	Role	Paper
Wakatsuki, Takao	CA	IAC-21.D2.3.11
Wali, Mohammad	CA	IAC-21.A3.3A.1
Wali, Mohammad	CA	IAC-21.C2.7.12
Walker, Chris	CA	IAC-21.A6.10-B6.5.1
Walker, John	CA	IAC-21.A3.IP.39
Walker, Lewis	A	IAC-21.A6.4.4
Walker, Madison	A	IAC-21.E9.1-A6.8.8
Walker, Roger	CA	IAC-21.B4.2.12
Walker, Roger	CA	IAC-21.A3.2A.5
Walker, Roger	CA	IAC-21.B2.3.6
Walley, Dominic	CA	IAC-21.E3.6.5
Walpot, Louis	CA	IAC-21.B4.9-GTS.5.1
Walsh, Justin	A	IAC-21.E5.1.9
Waltemathe, Michael	CA	IAC-21.A3.2B.6
Waltemathe, Michael	CA	IAC-21.A3.IP.32
Walters, William	CA	IAC-21.C4.10-C3.5.11
Wandel, Amri	A	IAC-21.A4.1.17
Wandel, Amri	A	IAC-21.A1.6.1
Wang, Bo	CA	IAC-21.A3.IP.24
Wang, Chen	CA	IAC-21.A1.8.2
Wang, Chuang	A	IAC-21.A6.5.5
Wang, Dandan	CA	IAC-21.B4.6B.2
Wang, Fei	CA	IAC-21.B4.IP.4
Wang, Fengwen	A	IAC-21.C1.9.3
Wang, Hubert	CA	IAC-21.D5.1.8
Wang, Jingji	CA	IAC-21.C1.IP.2
Wang, Liangyue	A	IAC-21.C1.1.10
Wang, Min	A	IAC-21.B2.4.6
Wang, Mingming	CA	IAC-21.D1.6.10
Wang, Ruiming	CA	IAC-21.D4.IP.1
Wang, Shuting	A	IAC-21.D2.IP.5
Wang, Tong	CA	IAC-21.D1.3.11
Wang, Wei	CA	IAC-21.A3.3B.5
Wang, Wei	CA	IAC-21.B2.4.6
Wang, Wei	CA	IAC-21.B2.7.9
Wang, Wenyuan	A	IAC-21.B5.1.4
WANG, Xiaowei	A	IAC-21.D2.5.1
WANG, Xiaowei	CA	IAC-21.D2.5.11
WANG, Xiaowei	CA	IAC-21.D4.IP.1
Wang, Xinsheng	A	IAC-21.B6.1.1
Wang, Xinsheng	CA	IAC-21.B4.9-GTS.5.3
Wang, Yu	CA	IAC-21.C1.IP.2
Wang, Yu	CA	IAC-21.D2.9-D6.2.6
Wang, Zhaokui	CA	IAC-21.C1.2.2
Wang, Zhaokui	CA	IAC-21.B4.6A.5
Wang, Zhaokui	CA	IAC-21.B4.6A.6
Wang, Zhaokui	CA	IAC-21.B4.6A.7
Wang, Zhaokui	A	IAC-21.B4.IP.7
Wang, Zihao	A	IAC-21.C4.6.5
Wani, Juhi	A	IAC-21.E2.4.12
Wani, Juhi	CA	IAC-21.B4.9-GTS.5.6
Waranon, Likhit	CA	IAC-21.B4.1.3
Wardat, Mashhoor	CA	IAC-21.E1.3.7
Wartemann, Viola	CA	IAC-21.D2.6.2
Waschke, Annika	CA	IAC-21.E1.2.11
Wasniowski, Aleksander	CA	IAC-21.B3.1.5
Watanabe, Hayato	CA	IAC-21.B4.3.7
Watanabe, Sei-ichiro	CA	IAC-21.A3.4A.1
Watanabe, Sei-ichiro	CA	IAC-21.A3.4A.3
Watanabe, Sei-ichiro	CA	IAC-21.A3.4A.4
Waterman, Alison	CA	IAC-21.E1.3.10
Waters, Mark	CA	IAC-21.E1.1.8
Watson, Er kai	A	IAC-21.A6.3.5
Wattanuntachai, Atipat	A	IAC-21.B4.1.3
Wauthier, Pascal	CA	IAC-21.A6.7.8
Way, Tyler	CA	IAC-21.E9.IP.3
Wayman, Alastair	CA	IAC-21.A3.3A.5
Weaver, Aaron	CA	IAC-21.A3.1.12
Webb, Alan	A	IAC-21.E3.6.5
Webb, Claire	CA	IAC-21.A4.1.7
Webber, Derek	CA	IAC-21.D4.1.9
Weber, Christoph	CA	IAC-21.A6.7.3
Weber, Felix	CA	IAC-21.D6.2-D2.9.4
Wedler, Armin	CA	IAC-21.A3.1.7
Wedler, Armin	A	IAC-21.A3.2A.3

Name	Role	Paper
Wedler, Armin	CA	IAC-21.A5.3-B3.6.5
Weeden, Brian	CA	IAC-21.E7.3.4
Weert, Annelotte	CA	IAC-21.A3.2B.6
Wegner, Jan Dirk	CA	IAC-21.B1.4.12
Wei, Changzhu	CA	IAC-21.D4.IP.1
Wei, Longtao	CA	IAC-21.C1.2.13
Wei, Shuang	CA	IAC-21.C1.9.10
Weikert, Marcel	CA	IAC-21.C4.10-C3.5.1
Weingaertner, Reese	CA	IAC-21.D5.1.8
Weinreich, Clément	A	IAC-21.E5.4.2
Weinzing, Dietmar	CA	IAC-21.A6.6.2
Weisman, Yulia	CA	IAC-21.A2.2.1
WEISS, Peter	CA	IAC-21.A3.2A.16
WEISS, Peter	A	IAC-21.D3.2A.5
Weiss, Sascha	A	IAC-21.B4.IP.23
Weizman, Ayelet	A	IAC-21.E1.4.3
Welch, Chris	CA	IAC-21.A3.IP.58
Welch, Chris	CA	IAC-21.C3.IP.4
Welch, Owen	A	IAC-21.C2.6.3
Welter, Michael	CA	IAC-21.D2.6.2
Wen, Guangwei	CA	IAC-21.B4.IP.7
Wende, Martin	CA	IAC-21.D1.1.2
Weng, Jingnong	CA	IAC-21.B6.1.1
Wenger, Manuela	CA	IAC-21.B2.3.6
Weppler, Johannes	A	IAC-21.B3.3.7
Wessels, Peter	CA	IAC-21.A3.2A.11
Wessels, Sean	CA	IAC-21.D3.IP.4
Wessels, Sean	CA	IAC-21.D3.IP.5
Wessels, Sean	CA	IAC-21.D3.IP.6
Westall, Frances	CA	IAC-21.D3.1.11
Westerberg, Lars-Göran	CA	IAC-21.B4.7.3
Weuta, Peter	CA	IAC-21.C4.1.11
Whalley, Martin	CA	IAC-21.A3.2A.8
Whitney, Callan	CA	IAC-21.B4.6B.11
Widenfelt, Axel	CA	IAC-21.B4.2.9
Widenfelt, Axel	CA	IAC-21.B4.IP.16
Widhalm, Dean	CA	IAC-21.A2.7.2
Wieczorek, Mark	CA	IAC-21.A3.5.6
Wiegand, Andreas	CA	IAC-21.C1.5.11
Wiehle, Stefan	CA	IAC-21.B5.1.3
Wiehle, Stefan	CA	IAC-21.B6.2.9
Wiens, Roger	CA	IAC-21.A3.3B.2
Wiesner, Sebastian	CA	IAC-21.B6.2.7
Wiid, Kannas	A	IAC-21.B5.3.1
Wijeratne, Harini Shanika	CA	IAC-21.E3.2.11
Wijnen, Thomas	CA	IAC-21.A7.3.7
Wikelski, Martin	CA	IAC-21.B3.3.7
Wilcox, Joseph	CA	IAC-21.C3.5-C4.10.2
Wilczynski, Lukasz	A	IAC-21.D3.2A.12
Wiley, Jaclyn	CA	IAC-21.D2.7.4
Wiley, Jaclyn	CA	IAC-21.A6.8-E9.1.10
Wilken, Jascha	A	IAC-21.D2.5.4
Wille, Eric	CA	IAC-21.B2.2.1
Wille, Leander	CA	IAC-21.B3.9-GTS.2.7
Wille, Leander	CA	IAC-21.B3.9-GTS.2.8
Willekens, Philippe	A	IAC-21.E1.6.1
Williams, Dave	CA	IAC-21.A1.4.7
Williams, Peter	CA	IAC-21.D2.6.2
Williams, Saira	CA	IAC-21.E1.5.13
Williamson, Alain	CA	IAC-21.C4.3.9
Willis, Peter	CA	IAC-21.A3.3B.2
Willson, Matthew	A	IAC-21.D2.4.9
Wilson, Andrew Ross	CA	IAC-21.A6.1.2
Wilson, Andrew Ross	CA	IAC-21.E2.4.2
Wilson, Andrew Ross	CA	IAC-21.A6.2.10
Wilson, Andrew Ross	A	IAC-21.D1.5.4
Wilson, Callum	A	IAC-21.C1.2.11
Wilson, James	CA	IAC-21.A6.7.8
Wilson, Kristine	CA	IAC-21.A2.7.1
Wilson, Nathan	A	IAC-21.C3.3.3
Wilson, Robert	A	IAC-21.E5.4.1
Wimmer-Schweingruber, Robert F.	CA	IAC-21.D4.4.1
Windelberg, Jens	CA	IAC-21.D2.6.1
Wingo, Dennis	CA	IAC-21.C2.1.12
Winter, Frank H.	A	IAC-21.E4.1.11

Name	Role	Paper
Winter, Matthias	CA	IAC-21.A3.2B.3
Winter, Othon	CA	IAC-21.A3.IP.48
Winter, Pieter	CA	IAC-21.A3.IP.6
Winters, Amanda	A	IAC-21.D4.1.5
Winters, Amanda	CA	IAC-21.D1.4B.1
Wischert, Daniel	CA	IAC-21.B1.3.6
Wischert, Daniel	CA	IAC-21.B1.4.4
Wischert, Daniel	CA	IAC-21.B2.5.5
Wiser, Lindsey	A	IAC-21.E3.2.3
Withnell, Pete	CA	IAC-21.A3.3A.1
Wittig, Manfred	CA	IAC-21.A6.IP.24
Wittkamp, Markus	CA	IAC-21.D2.6.3
Witzmann, Marco	CA	IAC-21.D1.4B.2
Woicke, Svenja	CA	IAC-21.D2.6.1
Wojciechowski, Konrad	CA	IAC-21.D2.5.10
Wokes, Stephen	CA	IAC-21.A6.6.3
Wolf, Ayla	A	IAC-21.E1.9.9
Wolf, Nicholas	CA	IAC-21.A6.7.3
Wolff, Michael	CA	IAC-21.A3.3B.1
Wolff, Michael	CA	IAC-21.A3.IP.29
Wolnievik, Andreas	CA	IAC-21.A2.5.5
Wood, Danielle	CA	IAC-21.E5.2.2
Wood, Danielle	CA	IAC-21.C4.4.5
Wood, Danielle	CA	IAC-21.A2.3.1
Wood, Danielle	CA	IAC-21.B5.2.5
Wood, Danielle	CA	IAC-21.A3.IP.15
Wood, Danielle	CA	IAC-21.B1.5.7
Wood, Danielle	CA	IAC-21.B1.5.8
Wood, Danielle	CA	IAC-21.C4.8-B4.5A.8
Wood, Danielle	CA	IAC-21.E6.3.7
Wood, Danielle	CA	IAC-21.A6.8-E9.1.3
Wood, Danielle	CA	IAC-21.E5.4.3
Wood, Danielle	CA	IAC-21.E1.9.2
Wood, Joshua	CA	IAC-21.B4.8.3
Woodruff, Renee	A	IAC-21.A1.1.8
Worden, Pete	CA	IAC-21.A4.1.7
Wormnes, Kjetil	CA	IAC-21.A3.2A.3
Worrall, Kevin	CA	IAC-21.C1.8.12
Wozniakiewicz, Penelope J.	CA	IAC-21.A1.6.2
Wright, Chris	A	IAC-21.C2.9.3
Wright, Dennis	A	IAC-21.D2.5.6
Wright, Jim	CA	IAC-21.A1.3.6
Wright, Jim	CA	IAC-21.A2.7.1
Wrzecioniarz, Piotr	A	IAC-21.D3.2A.4
WU, Shengbao	CA	IAC-21.D2.5.11
Wu, Xiaofeng	CA	IAC-21.C4.6.5
Wu, Yuzhen	CA	IAC-21.C4.2.13
Wu Chik, Kenny	A	IAC-21.B2.5.6
Wuerthner, Corinne	CA	IAC-21.D3.3.6
Wulfkühler, Jan-Philipp	CA	IAC-21.A6.4.9
Wulfkühler, Jan-Philipp	CA	IAC-21.C2.6.2
Wuyts, Floris	CA	IAC-21.B3.8.10
Wuyts, Floris	CA	IAC-21.B3.9-GTS.2.7
Wuyts, Floris	CA	IAC-21.B3.9-GTS.2.8
Wylie, Rick	CA	IAC-21.E1.6.5
Wätzig, Katja	CA	IAC-21.A6.4.9
Wätzig, Katja	CA	IAC-21.C2.6.2
Wöhler, Christian	CA	IAC-21.A3.2A.7
Wöhler, Christian	CA	IAC-21.A3.IP.39
Wörle, Maria Theresia	A	IAC-21.B6.2.7
Wüstenberg, Philipp	CA	IAC-21.B4.6B.6
Wątek, Barbara	CA	IAC-21.E3.2.4

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Xiang, Kun	CA	IAC-21.C1.IP.2
Xiao, Litian	A	IAC-21.D2.2.7
Xiao, Yijun	CA	IAC-21.A6.4.10
Xiaolin, DONG	CA	IAC-21.D2.5.1
Xiaolin, DONG	A	IAC-21.D2.5.11
Xing, Fei	CA	IAC-21.E2.4.1
Xing, Fei	CA	IAC-21.E2.4.5
Xing, Fei	CA	IAC-21.E2.4.6
Xing, Shiwang	CA	IAC-21.B6.1.1
Xiu, Wenbo	CA	IAC-21.C1.4.10

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Name	Role	Paper
Xiu, Wenbo	A	IAC-21.B2.7.4
Xiu, Yi	CA	IAC-21.C1.2.13
Xu, Peipei	CA	IAC-21.B4.IP.4
Xu, Yanwen	CA	IAC-21.A3.IP.24
Xu, Yun	A	IAC-21.C1.2.2
Xuedi, Chen	A	IAC-21.E2.4.5

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Yakhya, Josef	CA	IAC-21.A1.2.2
Yalcin, Refik	CA	IAC-21.B4.2.2
Yam, Chit Hong	CA	IAC-21.A3.IP.39
Yamada, Shuhei	A	IAC-21.C2.2.8
Yamada, Shuhei	A	IAC-21.C2.3.2
Yamada, Tetsuya	A	IAC-21.B6.1.9
Yamada, Tetsuya	A	IAC-21.C2.5.12
Yamada, Tetsuya	CA	IAC-21.A3.4A.2
Yamada, Tetsuya	CA	IAC-21.B6.3.2
Yamagata, Masaki	CA	IAC-21.C2.7.8
Yamakawa, Maiko	A	IAC-21.A2.4.4
Yamamoto, Takayuki	CA	IAC-21.C1.5.1
Yamamoto, Takayuki	CA	IAC-21.C1.7.5
Yamauchi, Takashi	CA	IAC-21.B4.2.3
Yamazaki, Taichi	A	IAC-21.B5.1.8
Yamazaki, Taichi	A	IAC-21.D4.1.11
Yamazaki, Taichi	A	IAC-21.B3.2.2
Yamazaki, Taichi	CA	IAC-21.B3.2.3
Yamazaki, Taichi	A	IAC-21.B3.2.5
Yamazaki, Taichi	A	IAC-21.D4.2.6
Yamazaki, Taichi	A	IAC-21.D4.2.10
Yamazaki, Taichi	A	IAC-21.D3.1.6
Yamazaki, Taichi	A	IAC-21.E5.3.6
Yamazaki, Taichi	CA	IAC-21.E5.3.10
Yamazaki, Taichi	A	IAC-21.E6.5-GTS.1.5
Yamazaki, Taichi	A	IAC-21.A1.5.10
Yamazaki, Taichi	A	IAC-21.A2.5.3
Yamazaki, Taichi	A	IAC-21.B6.2.12
Yamazaki, Taichi	A	IAC-21.E1.7.10
Yamazaki, Taichi	A	IAC-21.A2.6.5
Yamazaki, Taichi	A	IAC-21.B6.3.11
Yamazaki, Taichi	CA	IAC-21.D6.3.4
Yamazaki, Taichi	CA	IAC-21.D6.3.8
Yamazaki, Taichi	CA	IAC-21.E1.8.2
Yamazaki, Taichi	A	IAC-21.E3.4.7
Yamazaki, Taichi	A	IAC-21.B3.9-GTS.2.9
Yamazaki, Taichi	CA	IAC-21.B3.9-GTS.2.10
Yamazaki, Taichi	CA	IAC-21.B3.9-GTS.2.1
Yamazaki, Taichi	A	IAC-21.D3.3.3
Yamazaki, Taichi	A	IAC-21.E1.9.8
Yamazaki, Taichi	A	IAC-21.E1.9.10
Yamazaki, Yuki	CA	IAC-21.A2.6.5
Yan, Xiu-Tian	CA	IAC-21.D3.2A.2
Yan, Yongliang	A	IAC-21.E1.4.5
Yan, Yongliang	A	IAC-21.E7.5.6
Yan, Yushen	A	IAC-21.D2.3.6
Yana, Charles	A	IAC-21.A3.3A.8
Yanagase, Keiichi	A	IAC-21.C2.8.4
Yanagida, Kanta	CA	IAC-21.C1.5.1
Yang, Dong	A	IAC-21.B2.8-GTS.3.6
Yang, Jungho	A	IAC-21.D2.2.10
Yang, Mengfei	CA	IAC-21.D1.3.11
Yang, Shuheng	CA	IAC-21.A3.IP.24
Yang, Zhi	A	IAC-21.B4.6B.2
Yang, Zhongguang	CA	IAC-21.B1.2.12
Yang, Zhongguang	CA	IAC-21.A7.3.9
Yanyachi Aco Cardenas, Pablo Raul	CA	IAC-21.B4.9-GTS.5.3
Yao, Yang	A	IAC-21.B2.4.11
Yap, Xiao-Shan	A	IAC-21.A6.8-E9.1.6
Yaroshevych, Maryna	CA	IAC-21.A1.IP.6
Yarr, Neil	CA	IAC-21.A6.4.10
Yasar, Ali	CA	IAC-21.B4.2.2
Yashar, Melodie	A	IAC-21.E5.1.6
Yashar, Melodie	A	IAC-21.E1.3.5
Yau, Edrich	CA	IAC-21.A3.3A.4
Yazdani, Milad	CA	IAC-21.B3.9-GTS.2.6

Name	Role	Paper
Yazdani, Shabnam	A	IAC-21.E3.1.4
Ye, Olivia	CA	IAC-21.E1.2.11
Yemets, Mykhailo	CA	IAC-21.C4.4.11
Yemets, Vitaly	A	IAC-21.C4.4.11
Yin, Zhao	A	IAC-21.C2.3.3
Ying, Peng	CA	IAC-21.B2.3.10
Ying, Peng	A	IAC-21.B3.4-B6.4.6
Yip, Andrea	CA	IAC-21.E1.2.11
Yoffe, Gal	CA	IAC-21.E5.1.3
Yong, Sang-Soon	CA	IAC-21.E3.6.4
Yoo, Mi-jin	A	IAC-21.E3.6.4
Yoo, Mi-jin	A	IAC-21.E3.6.7
Yoon, Sung Wook	A	IAC-21.C1.4.3
Yoon, Wonjae	CA	IAC-21.C4.1.4
Yoshihara, Keisuke	CA	IAC-21.C2.5.12
Yoshihara, Keisuke	CA	IAC-21.A3.4A.2
Yoshikawa, Kent	CA	IAC-21.A3.4A.2
Yoshikawa, Kent	A	IAC-21.C1.8.3
Yoshikawa, Makoto	CA	IAC-21.B6.1.9
Yoshikawa, Makoto	CA	IAC-21.C4.5.13
Yoshikawa, Makoto	CA	IAC-21.C2.5.12
Yoshikawa, Makoto	CA	IAC-21.A3.4A.1
Yoshikawa, Makoto	CA	IAC-21.A3.4A.2
Yoshikawa, Makoto	A	IAC-21.A3.4A.4
Yoshikawa, Makoto	CA	IAC-21.B6.3.2
Yoshikawa, Makoto	CA	IAC-21.C1.8.3
Yoshimitsu, Tetsuo	A	IAC-21.B2.4.1
Yoshioka, Makoto	CA	IAC-21.B1.4.1
Young, Roland	CA	IAC-21.E1.4.4
Yousef, Areej	A	IAC-21.A7.2.8
Yousef, Areej	CA	IAC-21.A7.2.9
Yousuf, Maryam	CA	IAC-21.E1.IP.10
Yu, Haili	CA	IAC-21.C4.2.13
Yu, Jiaying	A	IAC-21.E7.IP.5
Yu, Xiaoyan	CA	IAC-21.C2.3.5
Yu, Xiaoyan	A	IAC-21.C2.3.12
Yuan, Jianping	CA	IAC-21.D4.3.10
Yuan, Jianping	CA	IAC-21.A6.5.5
Yuan, Jianping	CA	IAC-21.A3.IP.4
Yuan, Jing	A	IAC-21.A6.IP.4
Yuan, Yanhong	CA	IAC-21.D2.9-D6.2.6
Yuen, Anthony S.	CA	IAC-21.E1.5.3
Yueyang, Hou	CA	IAC-21.C1.9.3
Yulia, Ukraintseva	CA	IAC-21.A1.2.2
Yulin, Zhang	CA	IAC-21.C1.2.2
Yun, Lei	CA	IAC-21.C3.3.9
Yurchenko, Ekaterina	CA	IAC-21.B3.5.2
Yusupova, Anna	CA	IAC-21.A1.1.2
Yusupova, Anna	CA	IAC-21.A1.1.3
Yüksel, Elif	CA	IAC-21.E5.IP.6

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Za, Alberto	CA	IAC-21.A3.2B.17
Zaccardi, Federica	A	IAC-21.C2.6.7
Zaid, Christina	CA	IAC-21.A3.2B.13
Zaidi, Yaseen	CA	IAC-21.C2.9.3
Zamani, Mehran	A	IAC-21.A6.9.5
Zamarialai, Samir	CA	IAC-21.A3.2B.6
Zamora, David	CA	IAC-21.E3.4.2
Zannoni, Ugo	CA	IAC-21.A7.2.3
Zanotti, Giovanni	CA	IAC-21.C1.1.7
Zanotti, Giovanni	CA	IAC-21.D3.2A.6
Zanotti, Giovanni	CA	IAC-21.B4.7.13
Zanotti, Giovanni	CA	IAC-21.B6.3.5
Zapata Usandivaras, Jose Felix	A	IAC-21.C4.1.1
Zappino, Enrico	A	IAC-21.C2.1.7
Zarate-Villazon, Ángel M.	CA	IAC-21.C1.3.8
Zarate-Villazon, Ángel M.	A	IAC-21.D1.4B.7
Zarcone, Gaetano	CA	IAC-21.B2.7.8
Zarkan Cesari, Laetitia	A	IAC-21.E9.2.7
Zarubin, Vladimir	CA	IAC-21.A3.IP.16
Zavala Sousa, Andrea	CA	IAC-21.C1.3.8
Zavoli, Alessandro	CA	IAC-21.D2.3.8
Zavoli, Alessandro	CA	IAC-21.C1.4.7

Name	Role	Paper
Zawiła, Ryszard	CA	IAC-21.A3.2B.12
Zayer, Igor	CA	IAC-21.A6.6.2
Zayko, Julia	CA	IAC-21.A2.4.8
Zea, Luis	CA	IAC-21.E1.7.5
Zea, Luis	A	IAC-21.A2.7.1
Zea, Luis	CA	IAC-21.A2.7.2
Zea, Luis	CA	IAC-21.A2.7.7
Zeif, Reinhard	CA	IAC-21.B2.3.6
Zeiger, Florian	A	IAC-21.B2.1.9
Zeiger, Florian	CA	IAC-21.B2.2.7
Zeinalian, Ali	CA	IAC-21.A6.IP.20
Zeis, Christopher	CA	IAC-21.C2.1.12
Zekri, Eric	CA	IAC-21.A3.3A.5
Zhan, Haiyang	CA	IAC-21.E2.4.1
Zhang, Andrew	CA	IAC-21.E2.4.4
Zhang, Anthony	CA	IAC-21.E2.4.4
Zhang, Chengyu	A	IAC-21.C1.2.6
Zhang, Ding	CA	IAC-21.D3.2B.9
Zhang, Feng	CA	IAC-21.D2.5.1
Zhang, Feng	A	IAC-21.D4.IP.1
Zhang, Fenglin	CA	IAC-21.D2.2.7
Zhang, Haibo	CA	IAC-21.C1.1.10
Zhang, Hongwen	CA	IAC-21.A6.6.4
Zhang, Jackson	CA	IAC-21.A2.3.1
Zhang, Jianyu	CA	IAC-21.C2.3.12
Zhang, Lihui Lydia	CA	IAC-21.E3.2.8
Zhang, Lin	CA	IAC-21.A3.2C.5
Zhang, Meng	CA	IAC-21.E5.1.7
Zhang, Rui	A	IAC-21.B4.4.5
Zhang, Siwei	CA	IAC-21.A5.3-B3.6.5
Zhang, Tao	CA	IAC-21.A7.3.9
Zhang, Wenbin	CA	IAC-21.B4.1.1
Zhang, Wenbin	CA	IAC-21.D3.1.10
Zhang, Wenbin	CA	IAC-21.A2.3.10
Zhang, Wenfang	CA	IAC-21.C3.3.9
Zhang, Xiaowei	CA	IAC-21.D2.9-D6.2.6
Zhang, Xuan	CA	IAC-21.C3.3.9
Zhang, Xuan	CA	IAC-21.C3.4.2
Zhang, Xueyang	CA	IAC-21.B4.4.5
Zhang, Yan	CA	IAC-21.B4.6B.2
Zhang, Yao	CA	IAC-21.A6.7.10
Zhang, Yue	CA	IAC-21.E2.3-GT.4.3
Zhang, Yulin	CA	IAC-21.B4.IP.7
Zhang, Zhen	A	IAC-21.A6.10-B6.5.2
Zhang, Zhihao	CA	IAC-21.A3.IP.24
Zhao, JinHui	CA	IAC-21.B2.1.6
Zhao, Tian	CA	IAC-21.C3.4.2
Zhao, Yini	CA	IAC-21.C3.3.9
Zhaohui, Gao	CA	IAC-21.D2.5.11
Zhelonkin, Michael	CA	IAC-21.C4.6.9
Zheng, Maggie	CA	IAC-21.B5.2.5
Zheng, Yanhong	CA	IAC-21.D1.3.11
Zheng, Zixuan	CA	IAC-21.A3.IP.4
Zhong, Jianfei	CA	IAC-21.D1.6.10
Zhong, Xing	CA	IAC-21.B1.2.4
Zhong, Xing	CA	IAC-21.E2.4.5
Zhou, Dong	CA	IAC-21.B5.1.4
Zhou, Dong	CA	IAC-21.B5.1.7
Zhou, Dong	CA	IAC-21.B5.3.6
ZHOU, Meng	CA	IAC-21.C2.9.1
Zhou, Shiru	CA	IAC-21.D4.IP.1
ZHU, Guoqiang	CA	IAC-21.C4.3.3
Zhu, Shengying	A	IAC-21.C1.2.13
Zhu, Shengying	CA	IAC-21.C1.4.10
Zhu, Shengying	CA	IAC-21.B2.7.4
Zhu, Ze	A	IAC-21.A6.IP.6
Zhu, Zhanxia	CA	IAC-21.D4.3.10
Zhu, Zhanxia	CA	IAC-21.A6.5.5
Zhu, Zhanxia	CA	IAC-21.A3.IP.24
Zhu, Zhanxia	CA	IAC-21.A6.IP.6
Zhu, Zhanxia	CA	IAC-21.A6.6.4
Zhu, Zhanxia	CA	IAC-21.D1.6.10
Ziaja, Maciej	CA	IAC-21.B1.4.8
Zieliński, Błażej	CA	IAC-21.D2.6.9
Zieliński, Kacper	CA	IAC-21.D2.6.9

Name	Role	Paper
Zilli, Elisabetta	CA	IAC-21.B4.6A.12
Zimakov, Andrey	CA	IAC-21.E6.5-GTS.1.2
Zimbone, Santo Marcello	CA	IAC-21.E1.IP.3
Zimmermann, Bernhard	CA	IAC-21.A3.2A.16
Zięba, Michał	CA	IAC-21.B1.3.5
Zoccarato, Paolo	CA	IAC-21.B2.6.5
Zoccarato, Paolo	CA	IAC-21.B2.7.2
Zorigoo, Garid	CA	IAC-21.B4.1.6
Zorzi, Arianna	CA	IAC-21.B6.IP.7
Zou, Tina	CA	IAC-21.E1.2.11
Zuber, Maria T.	CA	IAC-21.A3.5.6
Zubko, Vladislav	A	IAC-21.E2.2.6
Zubko, Vladislav	A	IAC-21.C1.5.4
Zuliani, Chiara	CA	IAC-21.B1.5.3
Zverina, Jakub	CA	IAC-21.B2.4.5
Zwick, Martin	CA	IAC-21.D1.1.1
Zwick, Martin	CA	IAC-21.A3.3A.5

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Águeda Maté, Alberto	A	IAC-21.E3.4.2
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Ä

Ängermann, Maria	CA	IAC-21.A2.3.7
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Çelik, Onur	A	IAC-21.C3.2.6
Çelik, Onur	CA	IAC-21.C1.5.1

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Íñiguez Cano, Pablo	CA	IAC-21.A6.1.11
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Ö

Öberg, Michael	CA	IAC-21.D1.4A.6
Örger, Necmi Cihan	CA	IAC-21.B4.2.3
Öztekin, Onur	CA	IAC-21.B4.2.2

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Śniadek, Patrycja	CA	IAC-21.A2.7.6
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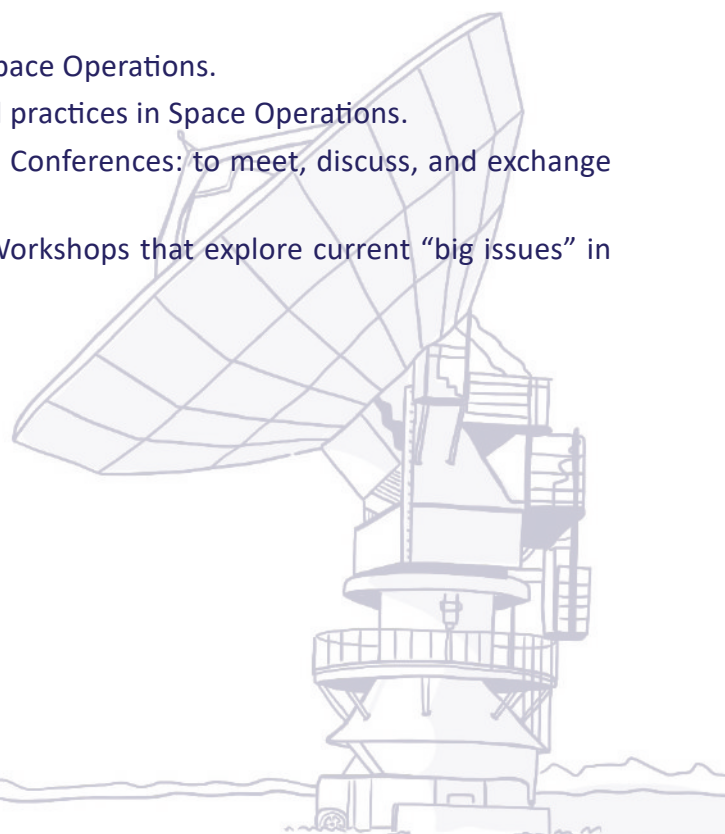
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