## Wednesday, 18 October 2017

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<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>08:30am - 10:30am</td>
<td><strong>P1: Plenary Session</strong></td>
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<tr>
<td>Welcome Message</td>
<td>Genevieve Campan, CNES Toulouse Center Director</td>
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<tr>
<td>Conference Introduction</td>
<td>Isabelle Rongier, IAASS President</td>
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<tr>
<td>Keynote Speakers</td>
<td>Robert (Bob) Cabana, NASA Director Kennedy Space Center</td>
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<td></td>
<td>Yasushi Horikawa, JAXA Technical Counselor</td>
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<td>Andrew M. Mueller, USAF Chief of Safety</td>
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<td>Herve Gilibert, ArianeGroup Chief Technical Officer</td>
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<tr>
<td>10:30am - 11:00am</td>
<td>Coffee Break</td>
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<tr>
<td>11:00am - 12:30pm</td>
<td><strong>S-01: Re-entry Safety Risk</strong></td>
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</table>
|                  | Oblate-Earth Effects on the Calculation of Ec During Spacecraft Reentry  
|                  | John B. Bacon, Mark Matney, NASA, United States of America  
|                  | Improving Estimation of Ground Casualty Risk from Reentering Space Objects  
|                  | Chris Ostrom, HX5, United States of America  
|                  | The D-SAT Mission: Status and Results of a EOL Disposal through Controlled Re-entry  
|                  | Matteo Trotti, Alessio Fanfani, Marco Bevilacqua, Stefano Antonetti, Lorenzo Ferrario, D-ORBIT, Italy  
|                  | Oxidation Laws and Emissivity Data at High Temperature for Implementation in DEBRISK Code  
|                  | Lucile Barka¹, Marianne Balat-Pichelin¹, Julien Annaloro², Pierre Omaly²  
|                  | ¹PROMES-CNRS laboratory, France; ²CNES, France |
| 11:00am - 12:30pm| **S-02: Human Performance for Safety & Organizational Culture– I** |
|                  | Moon-Mars habitability: Safety Requirements and Virtual Reality as a Test System  
|                  | Irene Lia Schlacht¹, Antonio Del Mastro²  
|                  | ¹Politecnico di Milano; ²Mars Planet, Italy  
|                  | Globalization of New Space Industry into Developing Countries and its Very Significant Impacts on Safety  
|                  | Norul Ridzuan Zakaria¹, Nasri Nasrun², Azizee Aziz³, Mohd Jamil Mohd Nor³, Ashwar Aziz³, Amluddin Yusof⁴  
|                  | ¹SOLVES, Italy; ²Space City, Malaysia; ³Spaceport Malaysia, Malaysia; ⁴Space Ventures, Malaysia  
|                  | Human Error Assessment and Reduction Technique (HEART) and Human Factors Analysis and Classification System (HFACS)  
|                  | Tiffany Miller Alexander  
|                  | NASA, United States of America |
Role of Veganism in the Future of the Space Exploration
Hernán David Mateus Jimenez, Omar Andres Lopez Camargo, Diego Andres Mendoza Mora
Universidad Nacional de Colombia, Colombia

Safety Management - Accelerating Safety Management System (SMS) Transformation
Gail M Talbott, James W Rudolph
Humanex, Inc, United States of America

11:00am - 12:30pm  S-03: Commercial Spaceflight - I

Weighing Risk in Microgravity: Evaluating and communicating acceptable levels of risk to commercial customers
John Christopher Beauregard
Space Policy Institute, United States of America

Solar Energy and Electric Propulsion for Better Safety Design and Operation of Near Space and Suborbital Vehicles
Norul Ridzuan Zakaria¹, Muhammad Amin Zakaria², Md Sayuti Ishak³, Anass Hanafi⁴, Ivan Cuzzi⁵, Azahar Mat Hasan⁶
¹SOLVES, Italy; ²Perak State Government, Malaysia; ³University Science Malaysia, Malaysia; ⁴University of Torino, Italy; ⁵Al-Biruni, Italy; ⁶Radio Aero Marine, Malaysia

Arguing the (Safety) Case(s) for Space
Andy Quinn
Saturn SMS Ltd, United Kingdom

Application of an Innovative Safety and Reliability Assessment Methodology to a Two-Stage Hypersonic Vehicle
Roberta Fusaro¹, Nicole Viola¹, Davide Ferretto¹, Dario Comitini¹, Martin Sippel²
¹Politecnico di Torino, Italy; ²DLR - Bremen

11:00am - 12:30pm  S-04: Panel Session:

On-orbit Large Spacecraft Constellation Collision Risk
Chairs: D. McKnight, F. Alby

12:30pm - 2:00pm  Lunch Break

2:00pm - 3:30pm  S-05: Space Debris - I

Insights Gained From the Massive Collision Monitoring Activity
Darren Scott McKnight
Integrity Applications, Inc, United States of America

Further Study of Space Debris Collision Warning Techniques
Ronglan Wang, Binghong Zhou
National Space Science Center, Chinese Academy of Sciences, China, People’s Republic of

On the End-of-Life Disposal of Spacecraft and Orbital Stages Operating in Inclined Geosynchronous Orbits
Carmen Pardini, Luciano Anselmo
Institute of Information Science and Technologies (ISTI) of the National Research Council (CNR) of Italy, Italy

Mitigation Measures for Orbital Debris: No More Debris from Ariane SYLDA
Stephane Heinrich¹, Kevin Mathis²
¹ALTRAN, France; ²CNES, France
### Optimization Techniques for Feature Detection of Orbital Debris

*Helia Sharif*, ², *Christian Pfaab*, ¹, *Matthew Hözel*

¹DLR Space Systems Institute, Germany; ²Universität Bremen, Germany

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| 2:00pm - 3:30pm | S-06: Regulations & Standards - I | Creation of a Comprehensive “Global Space Risk Scale”                                                | *Joseph N. Pelton*

International Association for the Advancement of Space Safety (USA Chapter)

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<tr>
<th>Title</th>
<th>Authors/Institution</th>
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<tbody>
<tr>
<td>Space Governance and Stakeholders Roles</td>
<td><em>Tommaso Sgobba, Isabelle Rongier</em></td>
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IAASS, The Netherlands

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<tr>
<td>Commonality between Chicago Convention and Outer Space Treaty:</td>
<td><em>Sanat Kaul</em></td>
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Merging Air and Space Management

International Foundation for Aviation, Aerospace and Development (India Chapter), India

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<td>Safety regulation for UK Launch</td>
<td><em>Andrew Philip Kuh, Ian Peter Lindsay</em></td>
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UK Space Agency, United Kingdom

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<tr>
<td>2:00pm - 3:30pm</td>
<td>S-07: Panel Session:</td>
<td>International Space Traffic Management and Space Governance</td>
<td><em>Chairs: K.-U. Schrogl, W. Ailor</em></td>
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<tr>
<td>2:00pm - 3:30pm</td>
<td>S-08: Designing Safety - I</td>
<td>Outlining and Implementing a Fast and Effective Safety Review and Approval process for Hosted Payloads, Small Spacecraft, and Complex CubeSats</td>
<td><em>Rachel Claire Willenbring</em></td>
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NASA Office of Safety and Mission Assurance/Mantech, United States of America

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<tr>
<td>Proactive and Innovative Risk and Safety Approaches For Small Entrepreneurial Space Systems</td>
<td><em>Edward Mango</em></td>
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Weintraus, United States of America

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<tr>
<td>Safety Verification of Solar Array Drive Assembly Strength Design Based on the Mission Profile</td>
<td><em>ZHU Xinggao, REN Liming, CHEN Fengxi</em></td>
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China Astronautics Standards Institute, China, People’s Republic of

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¹Japan Manned Space Systems Corporation, Japan; ²JAXA, Japan; ³University of Tokyo, Japan; ⁴Institute of Space and Astronautical Science, Japan

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<tr>
<td>Challenges of Determining “Safe Enough” in Human Space Flight</td>
<td><em>Robert Paul Ocampo, David Klaus</em></td>
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University of Colorado, United States of America

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<td>3:30pm - 4:00pm</td>
<td>Coffee Break</td>
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### S-09: Probabilistic Risk Assessment

**Field Programmable Gate Array Failure Rate Estimation Guidelines for Launch Vehicle Fault Tree Models**
Mohammad Izeddin Al Hassan, Paul Britton, Steven Novack, Spence Hatfield
NASA, United States of America

**Uncertainty Estimation Cheat Sheet for Probabilistic Risk Assessment**
Paul Thomas Britton, Mohammad Izeddin Al Hassan, Robert Ring
NASA, United States of America

**APOP+ Methodology for RAMS activities in Development and Production**
Isabelle Guerineel, ASL, France

**Probabilistic Risk Assessment model development & applications to operational decision making in HTV**
Hiraku Kudo1, Toru Yoshihara1, Tatsuya Shirai1, Masami Miki2, Satomi Takada2, Takashi Goto2, Koji Oga2
1JAXA, Japan; 2JAMSS, Japan

**A Real-Time Launching Calibration System Hardware Design, and Failure Analysis Approach for the Real-Time Mexican Satellite Space Launch Center Using FTA and MARKOV Chains**
Omar Ariosto Niño Prieto, Francisco Ruiz Ciriaco, Vicente Guevara Ayala, Cuauhtemoc Covarrubias Carranza, Jose Luis Sampayo Garcia
OneSide Tech, Mexico

**Probabilistic Risk Assessment for Space Flight Mission Based on Big data of S-SRMDB**
Wenming Zhou, Fuqiu Li, Xiaopeng Li
China Astronautics Standards Institute, People’s Republic of China

### S-10: Launch Safety - I

**New Consensus Standards for Ship and Spacecraft Safety During Launch and Reentry**
Paul David Wilde
Federal Aviation Administration, United States of America

**Hazard Areas by an Explosion of a Liquid Launch Vehicle on the Pad**
Hyungseok Sim, Kyusung Choi, Sangyeon Cho
KARI, Korea, Republic of (South Korea)

**The Adequate Balance between Automation and Human Decision**
Gerald Grucker
CNES, France

**Critical Onboard Software : How to Train the Team**
Olivier Boudillet, Goulwen Mintec
AIRBUS SAFRAN LAUNCHERS, France

### S-11: Space Traffic Control

**Integrating Foresight Activities into Space Situational Awareness Capability Development and Operation: Approaches from High Reliability Organisations**
Regina Peldszus
DLR Space Administration, Germany

**VIRAC Capabilities for Space Traffic Control**
Karina Skirmante1, Vladislavs Bezrukovs1, Normunds Jekabsons1, Marcis Bleiders1, Maria Nachaeva2
1Ventspils University College, Latvia; 2Radiophysical Research Institute of Nizhny Novgorod State University, Nizhny Novgorod, Russia
The Network of Passive Correlation Ranging for Geostationary Satellites.
Felix Bushuev¹, Mykola Kaluzhnyi¹, Oleksandr Shulga¹, Leonid Shakun², Vladislavs Bezrukovs³, Oleksandr Reznichenko⁴, Sergiy Moskalenko⁴, Yevgen Malynovsky⁴⁰⁰
¹Research Institute «Mykolaiv Astronomical Observatory»; ²Research Institute «Astronomical Observatory» of the Mechnikov Odesa National University; ³Ventspils University College, Latvia; ⁴Institute of Radio Astronomy, the NAS of Ukraine; ⁵Western Center of Radio Engineering Surveillance; ⁶Rivne Minor Academy of Sciences of School Age Youth

The Impact of Security and Defence Policies on the Establishment of a Space Traffic Management Regime
Ntorina Antoni, Angeliki Papadimitriou, Christina Giannopapa
European Space Agency, France

4:00pm - 6:00pm
S-11A Lecture:
SpaceLiner the Future European Sub-Orbital Point-to-Point Transportation System
Martin Sippel
DLR, Bremen, Germany

Thursday, 19 October 2017

8:30am - 10:00am
S-12: Panel Session:
Role of Standards in Commercial Human Spaceflight Safety Governance
Chairs: P. Wilde, T. Sgobba

8:30am - 10:00am
S-13: Re-entry Safety
Casualty Risk Reduction by Semi-Controlled Re-entry
Tobias Lips, Patrik Karrang
HTG GmbH, Germany

Assisted natural reentry with low thrust propulsion
Elisabet Cid¹, Claire Fremeaux², Kristen Lagadec²
¹CNES, France; ²AIRBUS DEFENCE AND SPACE, France

JELECTRA: New Features of the CNES Launch and Re-entry Risk Analysis Tool
Jean Francois Goester, Aurelie Bellucci
CNES, France

International Space Station Aerothermal Break-up Analysis using SCARAB
Patrik Karrang¹, Bent Frische¹, Fabian Zander², Stefan Lohle², Tobias Lips¹, Holger Krag³
¹Hyperschall Technologie Göttingen GmbH; ²Institut für Raumfahrtsysteme - Universität Stuttgart; ³ESA/ESOC

Reachability Analysis to Design Zero-Wait Entry Guidance
Alejandro Gonzalez-Puerta, Erwin Mooij
Delft University of Technology, Netherlands, The

8:30am - 10:00am
S-14: Space Traffic Control
Towards a European Space Traffic Management System
Ralph Tullmann¹, Christian Arbinger¹, Stuart Baskcomb², Jens Berdermann², Hauke Fiedler³, Erich Klock³, Thomas Schildknecht⁴
¹DLR GfR, Germany; ²ROSAS, Switzerland; ³DLR IKN, Germany; ⁴DLR RB, Germany; ⁵Austro Control, Austria; ⁶Astronomical Institute, University of Bern, Switzerland

9th IAASS Conference - Agenda
### Evolving Space Situational Awareness

**Ruth Stilwell**  
Aerospace Policy Solutions, LLC, United States of America

### News from SWIM in Space

**Frank Morlang**  
DLR German Aerospace Center, Germany

### Recent developments of JASST: a Java Space Surveillance and Tracking software library

**Michiel Zitterstein**, **Pierre Mercier**  
Thales Services, France

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| 8:30am - 10:00am | **S-14A Lecture:**  | **Evolution of Space Safety Organization at NASA**                     | **Geoge Gafka**  
NASA Johnson Space Center, USA                              |                                                                            |
| 10:00am - 10:30am | **Coffee Break**    |                                                                      |                                                                          |                                                                            |
| 10:30am - 12:30pm | **S-15: Commercial Spaceflight**  | **Development of a Flight Test Program for High Mach Spaceplanes with Daily Operating Capability**  | **Charles J Lauer**  
Rocketplane Global Inc, United States of America              |                                                                            |
| 10:30am - 12:30pm | **S-16: Launch Safety**  | **Autonomous Navigation using Gravity Gradient Measurements**          | **Rachit Bhatia, David Geller**  
Utah State University, United States of America          |                                                                            |
| 10:30am - 12:30pm | **S-17: Panel Session:**  | **Assessment of Commercially-Developed Space Vehicles and Evaluation of the DLR SpaceLiner**  | **R Barry Walden¹, Marcel Larivières¹, Michael Tevriz Kezirian¹²**  
¹University of Southern California, United States of America; ²International Space Safety Foundation, United States of America |                                                                            |

### Rafael's Test Range Safety Analysis Tool

**Ronen Ingbir**  
Rafael Advanced Defense Systems LTD., Israel

### A Novel Approach for Impact Point Prediction Based on Multiple Model Estimation with Dual Mode Tracking Radar

**Haryong Song, Yongtae Choi**  
Korea Aerospace Research Institute, Korea, Republic of (South Korea)

### Design-to-Safety: Analysis of the Explosion and Fragmentation Influence on Inert Debris Impact Footprints and Mitigation Solutions for Innovative Launcher Concepts

**Alexandra Martinez Toro**  
CNES, France

### Small Rocket Flight Safety (SS520-4)

**Ryoji Kobayashi**  
JAXA, Japan

### Safety Inter-operability of Moon bases

**Chairs: D. Isakeit, G. Gafka**
10:30am - 12:30pm  S-18: Regulations & Standards – II

Space Safety and Global Space Governance
Ram S. Jakhu\textsuperscript{1}, Joseph N. Pelton\textsuperscript{2}
\textsuperscript{1}McGill University, Canada; \textsuperscript{2}IAASS (USA Chapter), USA

A Model for Setting a Regulatory Framework for the Development of Sub-orbital Operations in Italy
Giovanni Di Antonio\textsuperscript{1}, Marco Sandrucci\textsuperscript{1}, Francesco Santoro\textsuperscript{2}, Alberto Del Bianco\textsuperscript{2}, Cristoforo Romanelli\textsuperscript{1}, Alessandro Cardi\textsuperscript{1}
\textsuperscript{1}ENAC - Italian Civil Aviation Authority; \textsuperscript{2}ALTEC S.p.A.

Unmanned High Altitude Platforms on the Way up; is there Lessons to be Learned?
Taro-Jesus Jossarian Kuusiholma
UAS Consultancy, Finland

The SpaceLegalTech On-Line Database
Lucien Rapp
Université Toulouse1-Capitole, France - Chaire SIRIUS

12:30pm - 2:00pm  Lunch Break

2:00pm - 3:30pm  P2: Plenary Session

Keynote Speakers:
- Johannes-Dietrich Woerner
  ESA Director General
- Robero Battiston
  ASI President
- Michael Hawes (TBC)
  Lockheed Martin Space Systems Company Vice President & Orion Program Manager
- George Nield
  FAA Associated Administrator
- Jean-Yves Le Gall
  CNES President

3:30pm - 4:00pm  Coffee Break

4:00pm - 5:30pm  S-19: Space Debris – II

A Comparative Study of Drag-Wires and Drag-Sails for Drag Enhancement of Spacecraft – Stowing, Deployment, Charging and Overall Operation
Aishwarya Manjunath\textsuperscript{1}, Vinod Ravi\textsuperscript{1}, Sharanabasaweshwara Asundi\textsuperscript{2}, Chaitra Krishnaraj\textsuperscript{2}, Yashaswi Gurumurthy\textsuperscript{3}, Shrikanta Aradhy\textsuperscript{2}, Navyata Gattu\textsuperscript{2}, Vishwas N M\textsuperscript{3}, Shiva Kumar P\textsuperscript{3}, Suraj Singh\textsuperscript{1}, Swastik Nayak\textsuperscript{2}, Ananya Nair\textsuperscript{1}, Anushree C S\textsuperscript{1}, Sahithi Vallamreddy\textsuperscript{1}, Sandhya G\textsuperscript{3}, Abdul Asif\textsuperscript{1}, Amrutha Varshini\textsuperscript{3}, Yashwanth Amara\textsuperscript{1}, Dr. Vinod Agrawal\textsuperscript{1}
\textsuperscript{1}PES University, Bengaluru, Karnataka, India; \textsuperscript{2}Tuskegee University, Alabama, USA; \textsuperscript{3}Sri Jayachamarajendra College of Engineering, Mysuru, Karnataka, India

Economic Fundamentals of Mitigating Orbital Debris
Martin K Zhu
Federal Aviation Administration, USA, United States of America

Upper Stage Passivation as a Means of Preventing Space Debris Appearance
Roman Viktorovich Mykhalchyshyn
Yuzhnoye State Design Office, Ukraine
**Evaluating MMOD Risk Assessments Using Anomaly Data**  
*Michael David Squire*  
NASA, United States of America

**Feasibility study on Dyneema(Registered) based spacecraft impact shielding**  
*Bob Verheijen*, *Derek Ian Gransden*, *Ulrich Heisserer*, *Harm van der Werff*  
"Delft University of Technology, The Netherlands; "DSM Dyneema, The Netherlands"

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<td>4:00pm - 5:30pm</td>
<td>S-20: Panel Session:</td>
<td>Air -launches and airports/spaceports safety</td>
<td><em>T. Pfitzer, A. Quinn</em></td>
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| 4:00pm - 5:30pm | S-21: Designing Safety – II | Mars Space Suit Safety                                               | *Joao Lousada*  
GMV Insyen, Germany |
|               |                          | Radiation Shielding for Long-Term Manned Space Missions              | *William Jerome Burger*  
FBK and TIFPA, Italy |
|               |                          | Orion: Fly Safely with European Design                                | *Florian Bittner*  
Airbus DS, Germany |
|               |                          | Design For Minimum Risk approach for Ariane 6                        | *Thierry Garnier*  
Airbus Safran Launchers, France |
|               |                          | Risk Management for Dynamic Radioisotope Power Systems                | *Christopher Matthes, Ph.D., David Woerner*  
NASA Jet Propulsion Laboratory |
| 4:00pm - 5:30pm | S-22: Panel Session:    | Habilitability and Human Performance on Mars Missions                 | *T. Beard, G. Boy*                                                      |

**Friday, 20 October 2017**

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| 8:30am - 10:30am | S-23: Space Traffic Control | Autonomous Feature Detection Technique of Orbital Satellites        | *Helia Sharif*, *Borja Martinez Calvo*  
"DLR Space Systems Institute, Germany; "OHB System AG, Germany |
|               |                          | ELROI: A License Plate for Your Satellite                            | *David M. Palmer*  
Los Alamos National Laboratory, United States of America |
|               |                          | Calculating a New Probability Density Function for Collision Probability Between Space Objects | *Asiye Türker*, *Prof. Dr. İhan Güler*, *Ümit Cezmi Yılmaz*  
"Gazi University, Turkey; "TÜRKSAT A.Ş. |
|               |                          | Risk of Collision: Effective Mitigation through Next Generation SDA Operational Services | *Mark Dickinson*  
Space Data Association, United Kingdom |
### 8:30am - 10:30am  S-24: Re-entry Safety – II

**A First Step toward Fragmentation Process Assessment of Re-entering Spacecraft: Mechanical Stress Analysis with the Spacecraft Oriented Simulation tool PAMPERO.**

Guillaume Prigent¹, Javier Carro², Baptiste Crusson², Laurent Stainier³, Pierre Omaly¹

¹CNES, France; ²GMV, France; ³Ecole Centrale Nantes - Institut GeM (UMR 6183 CNRS/ECN/UN), France

**Uncertainty Quantification with DEBRISK: Morris and ANOVA Methods for Preliminary Analysis**

Guillaume Prigent¹, Paul Legoux¹, Stéphane Galera², Julien Annaloro¹, Pierre Omaly¹

¹CNES, France; ²Altran, France

**Extrapolation of Population Grids for Risk Analysis**

Aurélie Bellucci¹, Nadine Tholey², Mathias Studer², Jean-François Goester¹, Nathalie Fuentes¹

¹CNES, France; ²APSYS, France

**Risk Analysis Between Aircrafts and Space Debris During Atmospheric Re-Entry**

Aurélie Bellucci¹, Nathalie Fuentes¹, Ana Guerra-Algaba², Morgan Cointe-Fourrier², Jean-François Goester¹

¹CNES, France; ²APSYS, France

**Benchmark of JAXA and CNES Re-Entry Safety Analysis Tools for Accurate Heat-Flux Prediction**

Keiichiro Fujimoto¹, Yasuhiro Saito¹, Hideyo Negishi¹, Prigent Guillaume², Martin Spei³

¹Japan Aerospace Exploration Agency, Japan; ²Centre national d'études spatiales; ³R. Tech

### 8:30am - 10:30am  S-25: Designing Safety

**The Radiation Safety Issue of the Nuclear Reactor Power System for Manned Martian Bases**

Jian Guo, Gu Hu, Xiaobo Sun

China Institute of Atomic Energy, China, People’s Republic of

**Study of Radiation-Induced Effects on Inert Solid Propellant**

Matteo Trotti¹, Alexander Weigand², Daniele Alloni³, Lorenzo Ferrario¹, Peter Jacob²

¹D-ORBIT, Italy; ²Bayern-Chemie GmbH; ³L.E.N.A. Università degli studi di Pavia

**CAST Analysis of the International Space Station EVA 23 Suit Water Intrusion Mishap**

Akshay Kothakonda

Dhruva Space, India

**Manned Mission to Mars: Technological Up Gradation Required and Mission Design**

Ankita Vashishtha

Indian Railways, India

**Derivation of the French Space Operation Act requirements in the Specifications of the future European Launcher Ariane 6**

Nathalie Dias

ArianeGroup, France

### 10:30am - 11:00am  Coffee Break

### 11:00am - 12:30pm  S-26: NEO Hazards

**Survey of Meteorite Falls: the FRIPON Project**

Jeremie Vaubaillon, Francois Colas, Chiara Marmo, Sylvain Bouley, Brigitte Zanda, Mirel Birlan, Pierre Vernazza, Auriane Egal, Jerome Gattacceca, Adrien Malgoyre, Julien Lecubin, Cyrille Blanpain, Stephane Caminade, Jean-Louis Rault

Observatoire de Paris, France

**Cosmic Threat from Near-Earth Objects.**

Daniel Hestroffer, Josselin Desmars, Siegfried Eggli, William Thuillot, Jérémie Vaubaillon

Paris observatory, PSL research university, CNRS, Sorbonne universités, UPMC univ. Paris06, univ. Lille, France
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| 11:00am - 12:30pm | S-27: Performance for Safety & Organizational Culture | Simulated Response to Fictitious Asteroid Threat  
Piezoelectric Actuator Controlled Lower Wavefront Sensor to Enhance Stability in Long Duration Exposures for Use in the Direct Imaging of Hazardous Space Objects.  
An Exercise in Planetary Defense | Nahum Melamed  
Samuel Mark Harrison  
William H Ailor | The Aerospace Corporation, United States of America  
International Space University, Strasbourg France  
Th Aerospace Corporation, United States of America |
| 11:00am - 12:30pm | S-28: Panel Session | Recovery of Habitual Gait Speed after 60 Days of Bed Rest in Young Healthy Male Subjects  
The Impact of a Haemodynamic Push-Pull Effect on Gz Tolerance During Simulated Sub-Orbital Spaceflight  
Consequences of Cardiac Rhythm Disturbances for Commercial Human Spaceflight | Marcello Grassi  
Martin Daumer  
Jörn Rittweger  
Uwe Mittag  
Patrick Lau  
Markus Gruber  
Edwin Mulder  
Arjan J.H. Meskers  
Eric L. Groen  
Mark M.J. Houben  
Ries M. Simons  
Erik Frijters | SLC The Human Motion Institute, Munich, Germany; Institute of Aerospace Medicine, German Aerospace Center (DLR), Cologne, Germany; Sport Science Department, Universität Konstanz, Konstanz, Germany  
TNO Technical Sciences, The Netherlands; Centre for Man and Aviation, Royal Netherlands Air Force  
Erasmus MC - University Hospital Rotterdam, Netherlands, The, Netherlands, The |
| 11:00am - 12:30pm | S-28: Panel Session | Strategic Employee Development in the Government Sector | Johnny Nguyen  
Nathalie Guevara  
Rebecca Barnett  
Barbara Thorpe | NASA, United States of America |
| 11:00am - 12:30pm | S-28: Panel Session | The Impact of a Haemodynamic Push-Pull Effect on Gz Tolerance During Simulated Sub-Orbital Spaceflight | Arjan J.H. Meskers  
Eric L. Groen  
Mark M.J. Houben  
Ries M. Simons  
Erik Frijters | TNO Technical Sciences, The Netherlands; Centre for Man and Aviation, Royal Netherlands Air Force |
| 11:00am - 12:30pm | S-28: Panel Session | Consequences of Cardiac Rhythm Disturbances for Commercial Human Spaceflight | Christian Lüthen | Erasmus MC - University Hospital Rotterdam, Netherlands, The, Netherlands, The |
| 12:30pm - 2:00pm | Lunch Break | | | |
| 2:00pm - 3:00pm | P3: Plenary Closing Session Part I | Space Safety Institute and Commercial Standards | Chairs: M. Kezirian, I. Rongier | |
| 3:00pm - 4:00pm | P4: Plenary Closing Session Part II | Astronaut Cognition | Bettina L. Beard | NASA-Ames, USA |
| 3:00pm - 4:00pm | P4: Plenary Closing Session Part II | Human-Centered Design of Upcoming Manned Mars Missions | Prof. Guy A. Boy | Florida Institute of Technology, USA |
| 4:00pm - 4:30pm | Conference Wrap-Up & Announcements | Conference Wrap-Up & Announcements | Isabelle Rongier | IAASS President |
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