**ASEC2021 Draft Schedule**

**All times in US Central time**

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| **MONDAY** | | | | | | | | | | | | | | | |
| 10:00 | | | OPENING | | | | | | | Joe, Insoo, Linda | |  | | | |
| 10:30 | | | Keynotes | | | | | | | Fox | | NASA, HMD | | | |
| 11:00 | | | Moser | | USAF | | | |
| 11:30 | | | Change over | | | | | | | | | | | | |
| 11:40 | | | Spacecraft Charging Simulations and Testing: Charging | | | | | | | Wright | | Invited: Environmental Testing of the Solar Probe Cup | | | |
| 12:00 | | | Andersen | | Electron Beam Tests of Carbon Composite Materials with Conductive Resin for Preventing Spacecraft Charging-Induced Electrostatic Discharge (ESD) | | | |
| 12:20 | | | Ferguson | | NASA Air Force Spacecraft Charging Analyzer Program Confirmation of GPS Arcing | | | |
| 12:40 | | | Forest | | Just-In-Time charging risk analysis service with the H2020/PAGER space weather predictions framework | | | |
| 1:00 | | | Lai | | Spacecraft Charging in Sunlight; Physical Mechanisms; Mitigation Techniques | | | |
| 1:20 | | | Lunch | | | | | | | | | | | | |
| 1:40 | | |
| 2:00 | | | Radiation Effects on Parts and Testing | | | | | | | McClure | | Invited: The Europa Clipper Mission - Hardness Assurance through Mission and System Design | | | |
| 2:20 | | | Jordan | | CURRENT CHALLENGES & SOLUTIONS IN NUCLEAR ROCKET AND ORBITAL SYSTEM DESIGN | | | |
| 2:40 | | | Robinson | | SIRE2 Toolkit Version 1.80 Update | | | |
| 3:00 | | | Shah | | Astronomical Reflectance Spectroscopy (ARS) characterization of various polymer materials in a simulated GEO environment | | | |
| 3:20 | | | Break | | | | | | | | | | | | |
| 3:40 | | | Instrument and Measure Techniques | | | | | | | Paterson | | Invited: HERMES: NASA’s Space Weather Payload for Gateway | | | |
| 4:00 | | | Conway | | Considerations for Optimal Sweep Rates of Sweeping Langmuir Probes in Space Plasmas | | | |
| 4:20 | | | Debchoudhury | | Data products from the Floating Potential Measurement Unit (FPMU) onboard the International Space Station | | | |
| 4:40 | | | Faudel | | Adding Triboelectric Charging Parameters to the Spacecraft Charging Material Database | | | |
| 5:00 | | | Gibson | | Comparison of Space Charge Distributions in Polymers Irradiated with Monoenergetic Electrons: Pulsed Electroacoustic Measurements and AF-NUMIT3 Modeling | | | |
| **TUESDAY** | | | | | | | | | | | | | | | |
| 10:00 | Tutorial | | | | | | De Donder | | | | | | The SPace ENVironment Information System (SPENVIS): a new framework. | | |
| 10:20 |
| 10:40 | Spacecraft Charging Simulations and Testing: General | | | | | | Dennison | | | | | | Real and Imaginary Permittivity Testing in High-Vacuum and Variable Temperature Settings | | |
| 11:00 | Green | | | | | | Adding Radiation Induced Conductivity Test Capability to the JPL Dynamitron | | |
| 11:20 | Keaton | | | | | | Methods for Yield Measurements of Highly Insulating Granular Materials | | |
| 11:40 | Robertson | | | | | | Analysis of Extrinsic Factors of Electron Yield with a “Patch” Model | | |
| 12:00 | Break | | | | | | | | | | | | | | |
| 12:20 | Space Weather Environments Impacts, and Modeling | | | | | | Somervill | | | | | | Invited: Cultivating Capabilities for Lunar Extreme Environments | | |
| 12:40 | Yalim | | | | | | A Data-driven Global Magnetosphere Model to Simulate Solar Wind/Earth’s Magnetosphere Interaction | | |
| 1:00 | Grimani | | | | | | Disentangling short- and long-term variations of the galactic cosmic-ray flux for future space missions | | |
| 1:20 | Martinez Sierra | | | | | | New JPL website for Natural Space Environment Tools | | |
| 1:40 | Lunch | | | | | | | | | | | | | | |
| 2:00 |
| 2:20 | In-flight Observations and Events | | | | | | Bennett | | | | | | Invited: Identifying Minor Debris Strikes in Spacecraft Telemetry: Methods and Applications | | |
| 2:40 | Garrett | | | | | | HIGH ENERGY ELECTRON FLUX ESTIMATES OF THE JUNO ENVIRONMENT NEAR JUPITER COMPARED TO THE JPL GIRE3 MODEL AND THE GALILEO DATA BASE | | |
| 3:00 | Johnson | | | | | | Use of Virtual Reality Environments in Manned Space Missions for Mental Health | | |
| 3:20 | Atomic Oxygen Environment, Effects, Testing, and Mitigation | | | | | | Miquel España | | | | | | Atomic Oxygen Treatment for Multipactor Performance Enhancement of RF Hardware | | |
| 3:40 | Miller | | | | | | Invited: Work Function Matching Passive Lunar Dust Mitigation Coating Preparation for Lunar Flight Opportunity | | |
| 4:00 | Fujita | | | | | | Atomic oxygen density variations in sub-LEO region: SLATS/AOFS flight data analysis | | |
| 4:20 | Itatani | | | | | | Effect of direct atomic oxygen exposures on carbon nanotube field emission cathode: comparison of flight data and in-situ ground-based experiment | | |
| **WEDNESDAY** | | | | | | | | | | | | | | | |
| 10:00 | | | | | Spacecraft Charging Simulations and Testing: Charging | | | | Likar | | | | | Spacecraft Charging and IESD Characterization of Carbon Composite Materials with Multiple Electron Beams | |
| 10:20 | | | | | PANDYA | | | | | Efficient Computation of Differential Charging Time Scale between Cover glass and Spacecraft Body in Severe GEO Plasma Environment | |
| 10:40 | | | | | Andersen | | | | | Preliminary Results of Radiation-Induced Conductivity Testing of Europa Clipper Dielectric Materials | |
| 11:00 | | | | | Hammerl | | | | | Using a Pulsed Electron Beam to Prevent Charging While Sensing Electric Potentials | |
| 11:20 | | | | | Wong | | | | | Internal ESD control and assessment for Europa Clipper inter-system | |
| 11:40 | | | | | Break | | | | | | | | | | |
| 12:00 | | | | | Current and Future Missions | | | | Gaines | | | | | Invited: The Commercial Lunar Payload Services (CLPS) | |
| 12:20 | | | | | Tighe | | | | | Materials environmental testing challenges for ESA’s future space missions | |
| 12:40 | | | | | Johnson | | | | | Advances in management of decompression sickness in space | |
| 1:00 | | | | | Martin | | | | | Understanding Spacecraft Test Environments in JPL’s Twenty-Five-Foot Space Simulator | |
| 1:20 | | | | | Benkoski | | | | | Experimental and Simulation Studies of the Adhesion of Titan Dust Simulants on Transparent Windows | |
| 1:40 | | | | | Lunch | | | | | | | | | | |
| 2:00 | | | | |
| 2:30 | | | | | Keynote: HEOMD | | | | | | | | | | |
| 2:50 | | | | | Other Space Environments and Effects | | | | Chambers | | | | | Plume-Surface Interaction: Preliminary Observations from a Physics Focused Ground Test | |
| 3:10 | | | | | DeStefano | | | | | Meteoroid Ejecta of Lunar Secondaries Engineering Model | |
| 3:30 | | | | | Paez | | | | | Lunar Surface Environments Added to the Design Specification for Natural Environments | |
| 3:50 | | | | | Soosaleon | | | | | Theory of Whistler Waves | |
| 4:10 | | | | | GRAZIANO | | | | | Electrolytic Nickel Sublimation Barrier Films for Neutron Sensor Cadmium Shields | |
| **THURSDAY** | | | | | | | | | | | | | | | |
| 10:00 | | Spacecraft Charging Simulations and Testing: General | | | | Taylor | | | | | Space Environment Effects on the Electron Yields of Thermal Control Coatings from the Long Duration Exposure Facility | | | | |
| 10:20 | | Wilson | | | | | Dielectric Breakdown Simulations using Stochastic Tree Model | | | | |
| 10:40 | | Chinn | | | | | Building Circuit Models of Internal Electrostatic Discharge Events | | | | |
| 11:00 | | Kim | | | | | What is Real Conductivity under Radiation? | | | | |
| 11:20 | | Romero-Calvo | | | | | Touchless potential sensing model for active spacecraft charging scenarios | | | | |
| 11:40 | | Break | | | | | | | | | | | | | |
| 12:00 | | MMOD Environment, Effects, Testing, and Mitigation | | | | Squire | | | | | Invited: Overview of the National Orbital Debris R&D Plan | | | | |
| 12:20 | | Matney | | | | | Some Unexpected Risks from Lunar Ejecta | | | | |
| 12:40 | | Moorhead | | | | | The relative importance of orbital debris, sporadic meteoroids, and shower meteoroids | | | | |
| 1:00 | | Schonberg | | | | | Predicting the Size of the Largest Particle Fragment in a Debris Cloud Created by an Orbital Debris Impact and its Associated Velocity | | | | |
| 1:20 | | Trott | | | | | Automated Detection, Location, and Evaluation of Hypervelocity Impacts to Space Vehicles and Structures | | | | |
| 1:40 | | Lunch | | | | | | | | | | | | | |
| 2:00 | |
| 2:20 | | Instrument and Measure Techniques | | | | McHarg | | | | | Invited: ESA | | | | |
| 2:40 | | Johnson | | | | | Potential for polSAR technology to characterize Martian terrain habitability | | | | |
| 3:00 | | Johnson | | | | | Solar-powered unmanned aerial vehicles for crater counting and prospecting planetary bodies | | | | |
| 3:20 | | Liu | | | | | m-NLPs Inference models using simulation and regression techniques | | | | |
| 3:40 | | Marchand | | | | | Energetic electron and photo-electron emission impact on spacecraft potential | | | | |
| **FRIDAY** | | | | | | | | | | | | | | | |
| 10:00 | | | | Space Weather Environments Impacts, and Modeling | | | | Varotsou | | | | | | | Electric Orbit Raising Radiation Environment and Solar Array Degradation |
| 10:20 | | | | Young | | | | | | | An Analysis of the Magnetospheric Specification Model and other Related models |
| 10:40 | | | | Zaman | | | | | | | The Impact of Heavy GCR Ions on Protons and Neutrons Emitted off the Lunar Surface |
| 11:00 | | | | Zhu | | | | | | | Comparison of JPL and ESP Solar proton fluence models using the RDSv2.0 dataset |
| 11:20 | | | | Fereydooni | | | | | | | Source of radio frequency waves in hypervelocity impact plasma |
| 11:40 | | | | Break | | | | | | | | | | | |
| 12:00 | | | | Radiation Effects on Humans and Materials | | | | Simonsen | | | | | | | Invited: Space Radiation Technologies for Human Missions beyond Low-Earth-Orbit |
| 12:20 | | | | Dennison | | | | | | | New System for Temperature Dependent Radiation Induced Conductivity Measurements |
| 12:40 | | | | Duhoon | | | | | | | Development and Preliminary Characterization of a Novel Rotary Cell Culture System for Radiation and Reduced Gravity Cell and Tissue Studies |
| 1:00 | | | | Mertens | | | | | | | NAIRAS Model Extension to the LEO Environment and New Products for Characterization of Single Event Effects |
| 1:20 | | | | Plis | | | | | | | Ground testing of the MISSE-16 Materials |
| 1:40 | | | | Lunch | | | | | | | | | | | |
| 2:00 | | | |
| 2:20 | | | | Space Weather Environments Impacts, and Modeling | | | | Onsager | | | | | | | Prototype Surface Charging Product for Geostationary Orbit |
| 2:40 | | | | Plis | | | | | | | Application of Machine Learning to Investigation of Arcing on Geosynchronous Satellites |
| 3:00 | | | | Ratnam Devanaboyina | | | | | | | VTEC predictability by AfriTEC, IRI-2016, IRI-Plas 2017 and NeQuick-G ionospheric models over Africa during geomagnetic storm on March 17, 2015 |
| 3:20 | | | | CLOSING Remarks | | | | | | | | | | | |