

30th Space Simulation Conference 2018

Mission Success Through Testing of
Critical Challenges

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5 - 8 November 2018

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Tuesday, NOVEMBER 6, 2018

7:30 am	Registration (every morning)
8:15 am	Welcome - Conference General Chair <i>Brent Nielsen - Northrop Grumman Aerospace Systems (NGAS)</i>
8:20 am	Welcome - IEST <i>IEST Representative</i>
8:30 am	Keynote Speaker - Europa-Clipper <i>Dr. Ed Hawkins- The Johns Hopkins University - Applied Physics Laboratory</i>
9:30 am	Welcome - Technical Program Chair <i>Ken Turner - The Johns Hopkins University - Applied Physics Laboratory</i>

SESSION 1 - NEW OR REFURBISHED FACILITIES

Chair: Jeff Kegley - NASA Marshal Space Flight Center

Co-Chair: William Dupuis - Northrop Grumman IS

9:35 am	Refurbishment of NASA's Johnson Space Center Liquid Nitrogen Bulk Storage Tanks in preparation for Thermal Vacuum Optical Testing of the James Webb Space Telescope (JWST)...1 <i>Sammy Garcia - NASA Johnson Space Center</i>
10:00 am	
10:30 am	Modernization of NASA Johnson Space Center's Chamber A to support Cryogenic Vacuum Optical Testing of the James Webb Space Telescope (JWST)...6 <i>John Lauterbach - NASA Johnson Space Center - Jacobs Technology Inc.</i>
10:55 am	Renovation of Thermal Vacuum Chambers at Idaho National Laboratory (INL) for Testing of Radioisotope Power Systems (RPS)...17 <i>Jaymon Birch - Idaho National Laboratory (INL)</i>

11:30 am Luncheon in the Coastal Ballroom
Luncheon Presentation - Parker Solar Probe
Speakers - Nicola Fox and Betsy Congdon
The Johns Hopkins University - Applied Physics Laboratory

SESSION 2 - DYNAMIC TESTING FOR SPACE APPLICATIONS

Chair: Brian Langmyer - Northrop Grumman IS

Co-Chair: Kelly Beattie - MIT-LL

1:15 pm	Development of NRC New Generation of Acoustic Spectrum Control System for High Intensity Noise Testing...27
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	<i>Yon (Eric) Chen - National Research Council Canada (NRCC)</i>
1:40 pm	A Direct Field Acoustic Control System based on ANSI S1.11 3rd octave band measurements made possible due to advances in signal processing and speaker technology...38 <i>Dale Schick - m+ p International</i>
2:05 pm	Protecting Flight Hardware During Spacecraft Vibration Testing Through Greater Understanding of the Control Systems Ability to Control and Limit Responses...57 <i>Shelly Conkey - The Johns Hopkins University - Applied Physics Laboratory</i>
2:30 pm	
3:00 pm	Structural Testing of High Value Test Articles: Integrated Risk Mitigation in Vibration Test Systems...71 <i>Chris Sensor - Data Physics Corporation - US</i>
3:25 pm	Parker Solar Probe; Horizontal MIS Method for Mass Properties...N/A <i>Felipe Ruiz - The Johns Hopkins University - Applied Physics Laboratory</i>
3:50 pm	Lunar Environment Simulation for a High Performance Motor...78 <i>Joe O'Connell - NASA Langley Research Center</i>
4:15 pm	

5:00 to 7:00 PM - Welcome Reception in Mainsail (Expo) Ballroom

Wednesday, NOVEMBER 7, 2018

7:30 am	Registration (every morning)
8:15 am	Welcome - Conference General Chair <i>Brent Nielsen - Northrop Grumman Aerospace Systems (NGAS)</i>
8:25 am	Keynote Speaker - Dragonfly <i>Melissa Trainer - Deputy PI, NASA Goddard Space Flight Center (GSFC)</i>
9:25 am	Welcome - Technical Program Chair <i>Ken Turner - The Johns Hopkins University - Applied Physics Laboratory</i>
SESSION 3 - THERMAL-VACUUM TESTING FOR SPACE APPLICATIONS <i>Chair: Keith Fields - NASA Jet Propulsion Laboratory (JPL)</i> <i>Co-Chair: Gugu Rutherford - NASA Langley Research Center</i>	

9:30 am	Use of a Combined Data Acquisition and Control System During a Large Spacecraft TVAC Tests Campaigns...83 <i>Elie Choueiry - David Florida Laboratory, Canadian Space Agency</i>
9:55 am	Creating the Required Deep Space Environments for Testing the James Webb Space Telescope (JWST) at NASA Johnson Space Center's Chamber A...98 <i>Andrew Fancis - NASA Johnson Space Center</i>
10:20 am	
10:50 am	A low cost, high fidelity thermal control method for testing in a Mars environment...N/A <i>Christopher Johnson - NASA Goddard Space Flight Center</i>
11:15 am	Thermal Design Verification Testing of the Solar Array Cooling System for Parker Solar Probe...107 <i>Eric Wallis - The Johns Hopkins University - Applied Physics Laboratory</i>

11:40 am - LUNCH ON YOUR OWN

SESSION 4 - MOLECULAR & PARTICULATE CONTAMINATION <i>Chair: Shelly Conkey - The Johns Hopkins University - Applied Physics Laboratory</i> <i>Co-Chair: Jim Snyder - The Aerospace Corp</i>	
1:20 pm	ALD Grown Metal Oxide Films For The Detection Of Molecular Contaminants on Spacecraft...133 <i>Gugu Rutherford - NASA Langley Research Center (NRC)</i>
1:45 pm	Sources and Solutions for Contamination Issues in Space Simulation (TVAC) Systems...140 <i>JR Gaines - Kurt J. Lesker Co.</i>
2:10 pm	Blind to Chemistry: Molecular Contaminant Films We Could be Missing During Visual Inspections and the Potential Impact to System Performance...154 <i>Dr. Elaine Seasley - NASA Langley Research Center (NRC)</i>
2:35 pm	
3:05 pm	Controlling Spores in Cleanrooms and Controlled Areas...N/A <i>Joe McCall, SM (NRCM) - STERIS Life Sciences</i>
3:30 pm	DAILY CLOSING REMARKS - GENERAL CHAIR

4:30 PM - Boarding Bus to CHART HOUSE for Cocktail Reception and Dinner

Thursday, NOVEMBER 8, 2018

7:30 am	Registration (every morning)
8:15 am	Welcome - Conference General Chair <i>Brent Nielsen - Northrop Grumman Aerospace Systems (NGAS)</i>
8:20 am	Welcome - Technical Program Chair <i>Ken Turner - The Johns Hopkins University - Applied Physics Laboratory</i>
SESSION 5 - NOVEL TEST REQUIREMENTS & APPROACHES <i>Chair: Yan Lui - NASA Goddard Space Flight Center</i> <i>Co-Chair: Deborah Waters - NASA Glenn Research Center</i>	
8:25 am	Risk Reduction of Integration and Testing Operations Using Augmented Reality on Parker Solar Probe...164 <i>Devin Hahne - The Johns Hopkins University - Applied Physics Laboratory</i>
8:50 am	Development and Testing of Space Environment Simulation Containing Lunar Simulant...174 <i>Taeil Chung - Korea (KICT)</i>
9:15 am	
SESSION 6 - SPECIAL TOPICS <i>Chair: Mary Cerimele - NASA Johnson Space Center (JSC)</i> <i>Co-Chair: Richard Cooper - NASA Marshall Space Flight Center</i>	
9:35 am	Evaluations of Candidate Materials for Advanced Space-Rated Vacuum Seals to Explore Space Environment Exposure Limits...185 <i>Patrick Dunlap, Jr. - NASA Glenn Research Center</i>
10:00 am	Exposure of Thermal Control Paints to Space-Simulated Environment <i>Daniel Engelhart - Assurance Technology Corporation</i> ...198
10:25 am	CONFERENCE CLOSING REMARKS - GENERAL CHAIR

10:35 am - Completion of Technical Program