

# **26th Space Simulation Conference 2010**

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**Volume 4 of 2**

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## CONFERENCE

**Tuesday, October 19, 2010**

- 7:00 AM **Registration**
- 8:00 AM **Welcome–Conference General Chair**  
*Manfred Diehl*  
*Lockheed Martin Space Systems*
- 8:05 AM **Welcome–IEST**  
*Carl Moran*  
*IEST Education Vice President*
- 8:10 AM **Keynote Speaker**  
*Dr. John M. Grunsfeld*  
*Deputy Director*  
*The Space Telescope Science Institute*
- 8:50 AM **Welcome–Technical Program Chair**  
*Elie Choueiry*  
*Canadian Space Agency*

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### **SESSION 1 – Novel Testing Requirements & Approaches**

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- Chair: Greg Gosian*  
*ITT Geospatial Systems*
- Co-Chair: Ed Packard*  
*NASA Goddard Space Flight Center*
- 8:55 AM **Upgrade of a Thermal Vacuum Chamber for 20-Kelvin Operations '3**  
*Raymond LeBlanc*  
*Canadian Space Agency*
- 9:20 AM **Gravity-Offloading System for Large-Displacement Ground Testing of Spacecraft Mechanisms '52**  
*Olyvia Han*  
*CSA Engineering*
- 9:45 AM **Exposure of Spacecraft Surface Coatings in a Simulated GEO Radiation Environment '96**  
*James B. Heaney*  
*NASA Goddard Space Flight Center*
- 10:10 AM **Coffee Break/Visit Vendor Booths**
- 10:40 AM **cRIO Controls Telescope on a Sounding Rocket '324**  
*Ryan Pacini*  
*Mink Hollow Systems*

- 11:05 AM     **Application of a Physics-Based Stabilization Criterion to Flight System Thermal Testing** "344  
*Matthew B. Garrison*  
*NASA Goddard Space Flight Center*
- 11:30 AM     **A Multifunctional Space Environment Simulation Facility for Accelerated Spacecraft Materials Testing** "382  
*J. Kleiman*  
*Integrity Testing Laboratory Inc.*
- 11:55 AM     **Lunch in Mainsail Expo Hall**  
  
**Luncheon Speaker**  
*Dr. John C. Mather*  
*NASA Goddard Space Flight Center*

***Important Note:** The luncheon is included only for conference attendees who register for the 3-day conference or the conference plus the tutorial package.*

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## **SESSION 2 – New or Refurbished Facilities**

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- Chair: Brian Langmyer*  
*Orbital Sciences Corporation*
- Co-Chair: Terry Fisher*  
*Jet Propulsion Laboratory*
- 1:30 PM     **Collimation Mirror Segment Refurbishment Inside ESA's Large Space Simulator** "435  
*Dirk Hagelschuer*  
*European Space Agency*
- 1:55 PM     **A Planetary Environmental Simulator/Test Facility** 464  
*J. Kleiman*  
*Integrity Testing Laboratory Inc.*
- 2:20 PM     **The INPE New 6m × 8m Space Simulation Chamber and the CBERS Spacecraft TM Thermal Balance Test** "4; 8  
*José Sergio Almeida*  
*Instituto Nacional de Pesquisas Espaciais*

- 2:45 PM **Wallops Flight Facility: Current and Future Test Capabilities for Suborbital and Orbital Projects** "556  
*David A. Wilcox*  
*NASA Wallops Flight Facility*
- 3:10 PM **Coffee Break/Visit Vendor Booths**
- 3:45 PM **A New Approach to Improve the Uniformity of Solar Simulator** "584  
*Kenta Maruyama*  
*Japan Aerospace Exploration Agency*
- 4:10 PM **New or Refurbished Facilities**"5; 4  
*James M. Snyder*  
*Aerospace Corporation*
- 4:35 PM **A Perfect Space Simulation Storm**"647  
*Alfonso Vasquez*  
*Space Systems Company*
- 5:00 PM **Certification Process for Environmental Chambers for Testing Flight Hardware** "659  
*Keith R. Fields*  
*Jet Propulsion Laboratory*
- 6:00 PM to 7:30 PM **Welcome Reception in Mainsail Ballroom (Expo Hall)**

**Wednesday, October 20, 2010**

- 7:00 AM      **Registration**
- 8:00 AM      **Welcome–Conference General  
Chair**  
*Manfred Diehl*  
*Lockheed Martin Space Systems*
- 8:05 AM      **Welcome–Technical Program Chair**  
*Elie Choueiry*  
*Canadian Space Agency*

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**SESSION 3 – Environmental Test for Space  
Applications**

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- Chair: Raj Singhal*  
*Canadian Space Agency*
- Co-Chair: Ken Turner*  
*The Johns Hopkins University*  
*Applied Physics Laboratory*
- 8:10 AM      **Latest Developments in Direct  
Field Acoustic Testing '687**  
*Paul Larkin*  
*Maryland Sound (MSI)*
- 8:35 AM      **Investigation of Acoustic Field  
Uniformity in Direct Field Acoustic  
Testing '6; 5**  
*Randy Spicer*  
*Orbital Sciences Corporation*
- 9:00 AM      **Force Limited Vibration Testing of  
JWST NIRSPEC Instrument Using  
Strain Gages '756**  
*Benoit Laine*  
*European Space Agency*
- 9:25 AM      **Coffee Break/Visit Vendor Booths**

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**SESSION 4 – Special Topics**

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- Chair: Dave Feick*  
*Northrop Grumman ESSS*
- Co-Chair: Brent Nielsen*  
*Northrop Grumman ESSS*

- 10:05 AM **Micrometeoroid Impacts and Optical Surface Scatter in Space Environment** '789  
*James B. Heaney*  
*NASA Goddard Space Flight Center*
- 10:30 AM **Overcoming Unintended Consequences of Ambient Pressure Thermal Cycling Environmental Tests** '7; 8  
*Robert Bornino*  
*National Technical Systems, Inc.*
- 10:55 AM **Assembly, Integration, and Test Center in Malaysia: Integration Between Building Construction Works and Equipment Installation** '845  
*Elena Woo Lai Leng*  
*National Space Agency of Malaysia*
- 11:20 AM **Integrated Circuit Reliability Simulation in Space Environments** '878  
*Nathan Blattau*  
*DfR Solutions*
- 11:45 AM **Lunch on Your Own**
- 1:20 PM **Robotic Lunar Lander Development Project Three-Dimensional Dynamic Stability Testing and Analysis** '8: ;  
*Marc A. Briere*  
*The Johns Hopkins University*  
*Applied Physics Laboratory*
- 1:45 PM **Effect of Charging Electron Exposure on 1064nm Transmission through Bare Sapphire Optics and SiO<sub>2</sub> over HfO<sub>2</sub> AR-coated Sapphire Optics** '954  
*Brian P. Ottens*  
*NASA Goddard Space Flight Center*
- 2:10 PM **Thermal Physical Properties of Thermal Coatings for Spacecraft in Wide Range of Environmental Conditions: Experimental and Theoretical Study** '968  
*E. Litovsky*  
*Integrity Testing Laboratory Inc.*
- 2:35 PM **Coffee Break/Visit Vendor Booths**

- 3:05 PM **Environmental Testing Activities  
and Capabilities for Turkish Space  
Industry '9: 7**  
*Altug Okan*  
*TÜBİTAK UZAY*
- 3:30 PM **Performance and Functionality  
Improvements to Thermal Vacuum  
Control System Next Generation " : 37**  
*Jeffrey de Wit*  
*Canadian Space Agency*
- 3:55 PM **Complex Mechanical Ground  
Support Equipment for Satellite  
Thermal Vacuum Test " : 7;**  
*Hyokjin Cho*  
*Korea Aerospace Research Institute  
(KARI)*
- 5:00 PM **Bus Boards for Paca House  
Reception**



**Thursday, October 21, 2010**

- 7:00 AM      **Registration**
- 8:00 AM      **Welcome–Conference General  
Chair**  
*Manfred Diehl*  
*Lockheed Martin Space Systems*
- 8:05 AM      **Welcome–Technical Program Chair**  
*Elie Choueiry*  
*Canadian Space Agency*

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**SESSION 5 – Molecular & Particulate  
Contamination**

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- Chair: Glenn Rosecrans*  
*Stinger Ghaffarian Technologies, Inc.*
- Co-Chair: Richard Cooper*  
*NASA Marshall Space Flight Center*
- 8:15 AM      **Molecular Contamination Generated  
in Thermal Vacuum Chambers"; 35**  
*Makiko Ando*  
*Japan Aerospace Exploration Agency*
- 8:40 AM      **Toward Validation of Particulate  
Transport Codes"; 6:**  
*Lubos Brieda*  
*Millennium Engineering and  
Integration Co.*

- 9:30 AM **Preventing Cross-Contamination of Hardware in Thermal Vacuum Chambers** "; 94  
*David W. Hughes*  
*NASA Goddard Space Flight Center*
- 9:55 AM **Coffee Break/Visit Vendor Booths**
- 10:25 AM **Updated Trends in Materials' Outgassing Technology**"; ; 5  
*Glenn Rosecrans*  
*NASA Goddard Space Flight Center*

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**SESSION 6 – Data Acquisition & Analyses**

*Chair: Andy Webb*  
*The Johns Hopkins University*  
*Applied Physics Laboratory*

*Co-Chair: Bill Wilkinson*  
*The Johns Hopkins University*  
*Applied Physics Laboratory (retired)*

- 10:55 AM **Electrical Power and Data Acquisition Setup for the CBERS 3 and 4 Satellite TBT**"3255  
*Durval Zandonadi Jr.*  
*Instituto Nacional de Pesquisas Espaciais*
- 11:20 AM **Method of Obtaining High-Resolution Intrinsic Wire Boom Damping Parameters for Multi-Body Dynamics Simulations**"328;  
*Alvin G. Yew*  
*NASA Goddard Space Flight Center*
- 11:45 PM **Thermal Vacuum Testing with Scalable Software Developed In-house**"3338  
*Louis-Philippe Girouard*  
*Canadian Space Agency*