



2006 CALCON Technical Conference

cal con

October 2–5, 2006

Utah State University
Eccles Conference Center
Logan, UT, USA

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Program

Conference Agenda

12:00 PM–1:00 PM

1:00 PM–5:30 PM

Monday, October 2, 2006

Registration

Pre-Conference Workshop at SDL: Use of the Moon as an On-orbit Calibration Source

7:30 AM–8:15 AM

8:15 AM–8:30 AM

Tuesday, October 3, 2006

Registration/Continental Breakfast

Conference Welcome/Introduction of Keynote Speaker: Michael Pavich—Director,
Space Dynamics Laboratory/Utah State University

8:30 AM–9:15 AM

Keynote Address: Dr. Katharine Gebbie, Director of the Physics Lab, NIST

9:15 AM–10:05 AM

Technical Session: Calibration of Operational Environmental Satellite Sensors: Part I

- **Stability of AIRS Calibration in the Presence Of Hardware Temperature Variations**
Denis Elliott—Jet Propulsion Laboratory
- **Quantum Cascade Lasers as Infrared Calibration Sources**
Tanya L. Myers—Pacific Northwest National Laboratory

9:30 AM–4:30 PM

Exhibits Open

10:05 AM–10:35 AM

Refreshment Break

10:35 AM–11:35 AM

Technical Session: Calibration of Operational Environmental Satellite Sensors: Part I (cont.)

- **Using Spacecraft Maneuvers for Earth-Observing Sensor Calibration and Characterization**
Jack Xiong—NASA/GSFC
- **Radiometric Performance of the CERES Earth Radiation Budget Climate Record Sensors on the EOS Aqua and Terra Spacecraft**
Kory J. Priestley—NASA Langley Research Center
- **Radiometric Calibration of LandsatTM using Multiple Calibration Sources**
Dennis Helder—South Dakota State University

11:35 AM–12:35 PM

Lunch Provided

12:35 PM–2:25 PM

Technical Session: Calibration of Operational Environmental Satellite Sensors: Part II

- **Cross Calibration of the Landsat-7 ETM+ and Landsat-5 TM with the ResurceSat-1 (IRS-P6) AWiFS and LISS-III Sensors**
Gyanesh Chander—SAIC/EROS/USGS

2:25 PM–3:10 PM

3:10 PM–4:40 PM

5:15 PM–6:00 PM
Free Evening

7:30 AM–9:20 AM

9:00 AM–9:30 AM

9:30 AM–4:30 PM

9:30 AM–10:40 AM



- **Comparison of Vicarious Calibration Techniques for GOES Imager Visible Channel**
Xiangqian Wu—NOAA/NESDIS/STAR
- **Automated Calibration of Operational Geostationary Satellite Visible Sensors using VIRS, TERRA and AQUA-MODIS**
David Doelling—AS&M
- **Recalibration of Microwave Sounding Unit for Climate Studies Using Simultaneous Nadir Overpasses**
Cheng-Zhi Zou—NOAA/NESDIS/STAR
- **Preliminary Comparison of AIRS, IASI, and HIRS Radiances Using Simultaneous Nadir Overpass Observations**
Likun Wang—QSS Group, Inc.

Poster Viewing/Refreshment Break

Technical Session: Specialized Calibration Equipment

- **Design and Development of a Cryogenic Michelson Interferometer**
Philippe Lagueux—Telops
- **An Absolute-Detector Based Radiometric Calibration Source**
Robert R. Bousquet—NIST
- **Hyperspectral Image Projectors**
Joseph P. Rice—NIST
- **Radiometric Calibration Capability Associated with Sources in the AEDC Sensor Test Chambers**
Randy Nicholson—ATA/AEDC

SDL Tour

Wednesday, October 4, 2006

Special US Restricted Session

Continental Breakfast

Exhibits Open

Technical Session: Critical Calibrations and Novel Characterizations of Components, Subsystems, and Systems

- **SOFIE Small-Attenuator Non-Linearity Calibration**
Scott M. Hansen—Space Dynamics Laboratory/Utah State University
- **The Use of Short-wave Infrared Detectors in Infrared-collimator Calibrations**
Howard Yoon—NIST
- **Linearity Calibration of LWIR and SMWIR IR Sensors using Metal Filament IR Sources**
Alan W. Bird—Space Dynamics Laboratory/Utah State University

10:40 AM–11:25 AM

11:25 AM–12:25 PM

Poster Viewing/Refreshment Break

Technical Session: Critical Calibrations and Novel Characterizations of Components, Subsystems, and Systems (cont.)

- Characterization of the Out-of-field Scatter in Calibration of Infrared Radiometers, Spectrometers and Imagers at NIST
Sergey Mekhontsev—NIST



- ~~NFIRE Track Sensor Payload Ground Calibration Overview~~
~~Joseph J. Tansock—Space Dynamics Laboratory/Utah State University~~

- Efficient and Versatile Internal Reference Sources for Remote Sensing Space Telescopes
Eric C. Kintner—LLL/SSG Precision Optronics, Inc.

12:25 PM–1:25 PM

1:25 PM–3:15 PM

Lunch Provided

Technical Session: Traceability of Absolute Radiometry and Remote Sensing

- A Fourier Transform Infrared Spectroradiometer for Comparison of Spectral Radiance Scales of Extended-Area Blackbodies
Jorge E. Neira—NIST
- Low Temperature Background Blackbody Calibrations at the LBIR Facility: Comparison between Radiometric Calibrations and Blackbody PRT Calibrations
Adriaan C. Carter—NIST, Optical Technology Division
- Calibration and Environmental Characterization of Thermal Infrared Cameras
Benjamin K. Tsai—NIST, Optical Technology Division
- NIST Tunable Filter Comparator for Accurate Measurements of Near Ambient Temperature Blackbodies
Vladimir Khromchenko—NIST
- Study of Spectral Directional Emissivity of Black Coatings for IR Applications
Leonard Hanssen—NIST

3:15 PM–3:45 PM

3:45 PM–4:55 PM

Refreshment Break

Technical Session: Update on EO/IR Calibration/Certification Standards

- Establishing Nationwide Uniformity and Traceability of IR Optical Property Measurements
Leonard Hanssen—NIST
- A Step-by-Step Approach to Implementing an ISO 17025-based Characterization Program for Optical Measurements
Randy Jost—Space Dynamics Laboratory/Utah State University

6:00 PM–8:00 PM

Barbeque at American West Heritage Center

7:30 AM–8:00 AM

8:00 AM–9:30 AM

9:30 AM–10:00 AM

10:00 AM–11:20 AM

11:00 AM–11:50 AM

11:50 AM–12:35 PM

Thursday, October 5, 2006

No Exhibits Available

Continental Breakfast

Technical Session: Validation of Remote Sensing Systems


- CERES Edition 2 “Rev 1” Calibration Adjustments to Compensate for Short Wave Spectral Darkening of Optics
Grant Matthews—AS&M
- Effect of Atmospheric Characterization on the Reflectance-based Vicarious Method of Radiometric Calibration of Landsat 7 ETM +
Nathan Leisso—University of Arizona, Remote Sensing Group
- At-sea Validation of Oceanic and Atmospheric Variables Derived from NASA EOS Infrared Imaging Spectroradiometers MODIS and AIRS
Peter J. Minnett—University of Miami
- Satellite Validation with Small Unmanned Aeronautical Vehicles (UAVs)
William Emery—University of Colorado

Refreshment Break

Technical Session: Validation of Remote Sensing Systems (cont.)

- Analysis of Relative Calibration Biases between POES, MetOP, and EOS AMSU-A Instruments Using the SNO Method
Robert A. Iacovazzi, Jr.—Earth Resources Technology, Inc.
- Methods for Validation of the On-Orbit Calibration of CALIOP and for Establishing a Bond with MODIS for Enhancing Future Retrievals
Jeremy Dobler—The University of Arizona
- Validate the Degradation Rate of NOAA-16 AVHRR Visible and Near-infrared Channels Using the Mid-latitude Desert Observations
Fangfang Yu—Earth Resources Technology, Inc.

Technical Session: Solar, Lunar, and Stellar Radiometric Measurements

- Absolute Physical Calibration for Infrared Photometry
G. H. Rieke—University of Arizona, Steward Observatory
-  ~~Extended Celestial Object Monitoring Program (ECOMP): Recent Results and Status of the Aerospace Spectral Energy Distribution (ASED) for Stars in the IR~~
~~Ray W. Russell—The Aerospace Corporation~~

Lunch Provided

12:35 PM–1:55 PM

Technical Session: Solar, Lunar, and Stellar Radiometric Measurements (cont.)

- **Lunar Measurement Results of Clouds and the Earth's Radiant Energy System (CERES) Instrument Sensors Aboard EOS Terra and Aqua Spacecraft**
Susan Thomas—SAIC
- **Applications of MODIS Lunar Observations**
Jack Xiong—NASA/GSFC
- **LUSI (Lunar Spectral Irradiance): A New Program to Reduce the Uncertainty in the Absolute Lunar Spectral Irradiance**
Steven Lorentz—L-1 Standards and Technology, Inc.
- **Telescope Spectrophotometric and Absolute Flux Calibration, and National Security Applications, Using a Tunable Laser on a Satellite**
Justin Albert—University of Victoria/California Institute of Technology

1:55 PM–2:10 PM

Conference Conclusion

Exhibit Descriptions

Exhibit Hours

Tuesday, October 3, 2006

9:30 AM–4:30 PM

Wednesday, October 4, 2006

9:30 AM–4:30 PM

Thursday, October 5, 2006

Exhibits Closed

Exhibit Layout

USU Eccles Conference Center

Updated September 15, 2006

