



**NASA Sounder Science Team
Meeting Agenda
09/13 - 09/16/2016
Greenbelt, Maryland
(Final Agenda Rev. 08/31/2016)**

Tuesday, September 13, 2016

**Light Morning Refreshments:
7:30 - 8:00)**

Session 1: Introduction (Chair: Joao Teixeira)

Joao Teixeira	NASA Sounder Science	NASA JPL	8:00 AM
Claire Parkinson	Update on the Aqua mission	NASA GSFC	8:20 AM
Mitch Goldberg	A NOAA JPSS perspective on the use of hyper spectral sounders data	NOAA	8:40 AM
Thomas August	Operational IASI L2 products and services at EUMETSAT, an overview of the latest developments	EUMETSAT	9:00 AM
Tom Pagano	The CubeSat Infrared Atmospheric Sounder (CIRAS)	NASA JPL	9:20 AM
Lambrigtsen, Bjorn	Sounding science at JPL	NASA JPL	9:40 AM
BREAK		NAS HQ	10:00 AM
Will McCarty	Current and Future Efforts in the Assimilation of Sounder Measurements at the Global Modeling and Assimilation Office	NASA GSFC	10:20 AM

Session 2: Weather & Climate (Chair: Eric Fetzer)

Lazaros Oreopoulos	Spectral Radiative Effect of MODIS Cloud Regimes as diagnosed by AIRS	NASA GSFC	10:40 AM
Kai-Wei Chang	Assessing the Information Content of AIRS and MODIS Radiances for Retrieving Ice Cloud Properties	University of Wisconsin	11:00 AM
Brian Kahn	On the Atmospheric Infrared Sounder (AIRS) ice cloud property and cloud thermodynamic phase retrievals	NASA JPL	11:20 AM
Jae N. Lee	The Warmest Spring (2016) as observed by AIRS	UMBC	11:40 AM
Richard Cullather	Analysis of the warmest Arctic winter, 2015-2016	UMD College Park	12:00 PM

LUNCH **12:20 PM**

Session 1: Introduction (Chair: Joao Teixeira) - Continued

Ramesh Kakar	Perspective from NASA HQ	NASA HQ	1:40 PM
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Session 2: Weather & Climate (Chair: Eric Fetzer) - Continued

Linette Boisvert	The extreme winter 2015/2016 Arctic cyclone and its impact on the Barents-Kara seas	NASA GSFC	2:00 PM
Abhay Devasthale	The radiative response of the lower troposphere to moisture intrusions into the Arctic	SMHI	2:20 PM
Flavio Iturbide-Sanchez	Atmospheric Stability Indices Derived from Temperature and Water Vapor Retrieved from Satellite Observations	NOAA/NESDIS/STAR	2:40 PM
John T. Sullivan	The evolution of a Stratospheric-Tropospheric Exchange (STE) event from 4 to 8 August 2014 at Fort Collins, Colorado	NASA GSFC	3:00 PM
Baijun Tian	Fourteen-Year Long AIRS Tropospheric Temperature And Humidity Profile Data Records And Their Use In Climate Model Evaluation And Analysis	NASA JPL	3:20 PM



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Session 2: Weather & Climate (Chair: Eric Fetzer) - Continued

BREAK	(Light Afternoon Refreshments)		3:40 PM
Larrabee Strow	AIRS Level 3: A new radiance based approach for climate compared to V6 Level 2 and ERA-Interim	UMBC	4:00 PM
Sergo DeSouza-Machado	Studying Changes in PDFs of selected AIRS channels	UMBC	4:20 PM
Kexin Zhang	Estimation of Outgoing Longwave Radiation from Cross-track Infrared Sounder (CrIS) Radiance Measurements	I.M. Systems Group, Inc.	4:40 PM
Xiaohua Pan	Biomass Burning Events in the Tropics Associated with ENSO during 2002-2015 and their Impacts on the Concentrations of Tropospheric Aerosols and Greenhouse Gases	UMD College Park	5:00 PM
Jie Gong	Satellite Perspective of Long-term variabilities of Global Gravity Wave Activity	NASA GSFC	5:20 PM
ADJOURN			5:40 PM



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Session 2: Weather & Climate (Chair: Eric Fetzer) - Continued

Xianglei Huang	The stratospheric changes inferred from 10 years of AIRS and AMSU-A radiances data sets	University of Michigan	8:00 AM
Nicholas Nalli	Satellite Sounder Observations of Contrasting Tropospheric Moisture Transport Regimes: Saharan Air Layers, Hadley Cells, and Atmospheric Rivers	NOAA	8:20 AM
Stephen Nicholls	Out of this World: Characterizing the Dynamics and Evolution of the Saharan Air Layer in North Africa from Space-based Platforms	UMBC	8:40 AM
Will McCarty	Assessing the Assimilation of Infrared Sounder Radiances using Forecast Sensitivity to Observation Impact (FSOI) Metrics	NASA GSFC	9:00 AM
Joel Susskind	Improving 7 day forecast skill by assimilation of retrieved AIRS temperature profiles	NASA GSFC	9:20 AM
Oreste Reale	Impact of adaptive thinning of cloud-cleared radiances in the NASA GEOS-5 on global forecast skill and tropical cyclone analysis and forecast	NASA GSFC	9:40 AM
BREAK			10:00 AM
Oreste Reale	Contrasting impacts of AIRS, IASI and CrIS on global skill and tropical cyclone representation in a global data assimilation and forecast system	NASA GSFC	10:20 AM

Session 3: NPP Special Session (Chair: Antonia Gambacorta)

Part I: Overview of the NPP Science Team Activities

Chris Barnet	Overview of the NPP Science Team activities	STC	10:40 AM
Steve Friedman	Status and plans for Sounder SIPS	NASA JPL	11:00 AM
Evan Manning	Common Formats and Consistent Products from Sounders, Part 1: Technical Issues	NASA JPL	11:20 AM
Eric Fetzer	Common Formats and Consistent Products from Sounders, Part 2: Science Issues	NASA JPL	11:40 AM

Part II: CrIS Level 1b Status

Larrabee Strow	Observations of CrIS and IASI noise and ECMWF model Covariances	UMBC	12:00 PM
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LUNCH **12:20 PM**

George Aumann	Radiometric comparisons of AIRS and CrIS using 4 years of Random Nadir Samples (RNS)	NASA JPL	1:40 PM
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Part III: Progress in Algorithm Development, Applications and Validation

Joel Susskind	Comparative results of AIRS/AMSU and CrIS/ATMS retrievals using scientifically equivalent retrieval algorithms.	NASA GSFC	2:00 PM
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NOTE: Tuesday thru Thursday Sessions continue on next/reverse page

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Wednesday, September 14, 2016 - Continued

Session 3: NPP Special Session (Chair: Antonia Gambacorta) - Continued

Part III: Progress in Algorithm Development, Applications and Validation - Continued

Alan Lipton	An Earth System Data Record Atmospheric Profiling Algorithm for Suomi-NPP CrIMSS and Other Sensors	AER	2:20 PM
Antonia Gambacorta	Status of the CLIMCAPS/NUCAPS algorithm: recent upgrades and applications	STC	2:40 PM
Eva Borbas	Status of the MEASURES CAMEL database	University of Wisconsin	3:00 PM
Jonathan Smith	The NOAA Operational High-Resolution CrIS Channel Selection: Impacts on CLIMCAPS/NUCAPS Trace Gas Retrievals	STC	3:20 PM
BREAK (Light Afternoon Refreshments)			3:40 PM
Van Dang	Comparison between NUCAPS and GSFC retrieval of CrIS+ATMS and the AIRS retrieval	NASA JPL	4:00 PM
Bomin Sun	An assessment on the Suomi-NPP CrIS/ATMS NUCAPS sounding product using Dedicated/GRUAN and conventional radiosonde observations	NOAA	4:20 PM

Part IV: MW Retrieval Developments

Bjorn Lambrigtsen	The NASA ATMS retrieval system – A status update	NASA JPL	4:40 PM
Evan Fishbein	Comparisons of Coincident ATMS and AIRS Products from a Common Retrieval Framework.	NASA JPL	5:00 PM
Mathias Schreier	Comparing MW-retrievals with a modular approach: Sensitivity to forward models and other parameters	NASA JPL	5:20 PM
Antonia Gambacorta	Status of the MIT retrieval module in NUCAPS/CLIMCAPS: algorithm updates, look up tables and inter-consistency with AMSU and MHS	STC	5:40 PM

ADJOURN **6:00 PM**



**NASA Sounder Science Team
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Thursday, September 15, 2016

**Light Morning Refreshments:
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Session 4: Atmospheric Composition (Chair: Dejian Fu)
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Part I: Updates on Operational Data Products

Edward Olsen	Introducing The Expanded AIRS V6 Tropospheric CO2 Product	NASA JPL	8:00 AM
Juying Warner	Updates on AIRS NH3	UMD College Park	8:20 AM
Nicholas Nalli	NUCAPS Atmospheric Profile EDR Performance: Ozone and Trace Gas	NOAA	8:40 AM

Part II: Application of Data Products
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Le (Elva) Kuai	Understand the hydrological controls on the tropospheric ozone greenhouse gas effect using AURA TES instantaneous radiative kernel	JIFRESSE	9:00 AM
Nadia Smith	The space-time structure of NUCAPS trace gas products – a study in variance scaling	STC	9:20 AM
Xun Jiang (Remote Presenter)	Investigation of the Coupling Between Biosphere and Atmosphere Using Satellite CO ₂	University of Houston	9:40 AM

BREAK **10:00 AM**

Part III: Progress in Algorithm Development and Validation

Jean-Luc Moncet	Application of OSS to the modeling of hyper spectral sounding observations	AER	10:20 AM
Xiong (Shawn) Xiaozhen	Retrieval of Atmospheric Methane (CH ₄) Using S-NPP CrIS Full Spectral Resolution Data	NOAA	10:40 AM
Leonid Yurganov	Methane retrievals from AIRS, IASI (MetOp-A and MetOp-B) over the Arctic Ocean: comparisons with concentrations in-situ and locations of methane hydrates	UMBC	11:00 AM
Dejian Fu	Profiles of Tropospheric CH ₄ , CO and O ₃ Retrieved from Multiple Satellites	NASA JPL	11:20 AM
Vivienne Payne	Expanding the suite of composition products from the NASA sounders	NASA JPL	11:40 AM

Session 5: Sounder Products & Applications (Chair: Tom Pagano)

Part I: Retrievals and RTA

Tim Hultberg	The PWLR-cube: operational 3D statistical retrievals for hyperspectral sounders and error estimation	EUMETSAT	12:00 PM
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LUNCH **12:20 PM**



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Thursday, September 15, 2016 - Continued

Session 5: Sounder Products & Applications (Chair: Tom Pagano) - Continued

Part I: Retrievals and RTA - Continued

Joel Susskind	Status and Plans for Version 7 at SRT	NASA GSFC	1:40 PM
Adam Milstein	Neural Network Recent Updates	MIT	2:00 PM
Bill Irion	Single-footprint retrievals from cloudy AIRS spectra	NASA JPL	2:20 PM
Larrabee Strow	AIRS RTA Updates	UMBC	2:40 PM
George Aumann	Using PDF to compare AIRS cloudy spectra with cloudy RTM calculated spectra.	NASA JPL	3:00 PM
Robert C. Wilson	A Comparison of Radiative Transfer Algorithms in Clear and Cloudy conditions with an emphasis on the shortwave IR band	NASA JPL	3:20 PM

BREAK (Light Afternoon Refreshments) 3:40 PM

Junye Chen	A Comprehensive validation of temperature and moisture sounding in NOAA Microwave Integrated Retrieval System (MIRS)	NOAA	4:00 PM
Christopher Grassotti	Microwave Integrated Retrieval System (MiRS): Algorithm Overview, Performance, and Application of Sounding Products	NOAA	4:20 PM

Part II: Applications

Sharon Ray	Overview and Status of AIRS Applications	NASA JPL	4:40 PM
Amy Braverman	Fusion of AIRS and CrIMMS Temperatures	NASA JPL	5:00 PM
Heidar Thrastarson	A Humidity-Driven Prediction System for Influenza Outbreaks	NASA JPL	5:20 PM
Emily Berndt	Development and Application of Hyperspectral Infrared Sounder Ozone Retrieval Products for Operational Meteorology	NASA Huntsville	5:40 PM

ADJOURN 6:00 PM



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Friday, September 16, 2016

*Light Morning Refreshments:
7:30 - 8:00*

Session 5: Sounder Products & Applications (Chair: Tom Pagano) - Continued

Part III: Higher Level Products and Services

Thomas Hearty	Existing and planned GES DISC services and a use case for a data list from multiple products collocated with Greenland station observations	NASA GSFC	8:00 AM
Elaine Keim	AIRS monthly mean data analysis and current climatology in Giovanni	NASA GSFC	8:20 AM
John Pham/Evan Manning	3D visualization of AIRS clouds	NASA JPL	8:40 AM

Part IV: Calibration

Likun Wang	Radiometric consistency assessment of hyperspectral infrared sounders	UMD	9:00 AM
Isaac Moradi	Challenges and progresses in the intercalibration of microwave humidity sounders	UMD	9:20 AM
Manik Bali	Using AIRS and IASI as in-orbit references in GSICS	NOAA	9:40 AM

BREAK

10:00 AM

Steve Broberg	AIRS Calibration Status	NASA JPL	10:20 AM
Evan Manning	AIRS calibration verification	NASA JPL	10:40 AM
Joao Teixeira	Concluding Discussion	NASA JPL	11:00 AM

ADJOURN

12:00 PM