

THIRD CIRCULAR

**The 16<sup>th</sup> JCSDA Technical Review Meeting  
& Science Workshop on Satellite Data Assimilation**

**May 30 –June 1, 2018**

will be held at the

**National Oceanic and Atmospheric Administration (NOAA)  
David Skaggs Research Center (DSRC)**  
325 Broadway  
Boulder, CO 80305

**For dining and accommodation options in Boulder please visit:**

<https://www.bouldercoloradousa.com/>

**Introduction:**

The annual Technical Review Meeting and Science Workshop provides a forum to review the recent and planned scientific development sponsored by the NASA-NOAA-DOD Joint Center for Satellite Data Assimilation, (JCSDA.) It enhances coordination of these efforts internally and with the broader research community. In addition to the formal presentations, the agenda will include extensive time for informal discussions among scientists from all the JCSDA partners and with JCSDA managers. JCSDA management greatly values the recommendations and ideas put forth during the meeting, and these serve as one of the inputs when developing technical directions for future activities.

The JCSDA partners (NASA-NOAA-DOD) contribute core personnel and services, in-kind members and services, and supported external researchers to support these efforts. To fulfill the Center's mission of accelerating and improving the use of satellite data in operational analysis and predictions, it is essential that all of these efforts be complementary, well-coordinated, and aligned with both the over-arching priorities and the current projects. The JCSDA technical review meeting and science workshop is intended to facilitate this coordination.

**Logistics:**

Logistical information is available via the link <https://cpaess.ucar.edu/meetings/2018/16th-jcsda-technical-review-meeting>. **Registration still is open for US citizens. However it closed for foreign nationals as of April 30, 2018.** There is no registration fee for the Meeting.

**NOAA Skaggs Building: IMPORTANT! PLEASE READ!**

All registrants are required to sign in and will receive a 3-day visitor badge at the Visitors Center, which opens at 6 AM. Come early, and please be patient as it will take some time to process all participants.

Personal Identification is required of every registrant, regardless of status, to enter the Skaggs Building each day. Please remember to bring at least two forms of current original state or federal issued photo identification with you to show, as required, at the gate, the Visitor Center and the guards' desk inside.

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Acceptable forms of identification include: state-issued driver's license, state-issued identification card, passport, passport card, NOAA CAC card, DOD CAC card, Federal Agency HSPD-12 ID, Veterans ID, Military ID, Military Dependents ID, Trusted Travel card, and/or Transportation Workers Identification Card (TWIC)

**Green Card Holders! Please remember to bring your current, original, unexpired green card. You will not be granted access to the facilities without it.**

**Foreign Nationals! Please remember to bring your current, original, unexpired passport. You will not be granted access to the facilities without it.**

All cars entering the Skaggs parking lot will be subject to search at the Guard's Gate before being allowed on the premises, which can take 15 minutes or longer to complete.

It is **highly recommended** that registrants carpool as much as possible, and/or park outside the gates and walk in to the facility. The Visitors Parking Lot is small and will fill up quickly. The Flat Iron Park and Ride is a paid parking facility about a block away from the NOAA Skaggs Building entrance, located at 601 27<sup>th</sup> Way, Boulder, CO 80305. The security process for walking in to the facility is about 5 minutes long.

We are working to ease the process as best we can. A roster of all attendees registered as of May 23, 2018 will be at the guards' station. Additional federal staff will be present to assist with the entry process.

### **Food and Beverages:**

Arrangements have been made for a Continental breakfast, snacks, and lunch. Lunch will only be provided on Wednesday and Thursday, May 30-31, 2018. Federal employees may pay for their meals via this link: <https://cpaess.ucar.edu/meetings/2018/16th-jcsda-technical-review-meeting-federal-meals>.

### **Program:**

As of this writing there are over 70 registered participants for the Workshop. The program consists of over 30 oral presentations and 11 posters. The final agenda is attached.

Remote access will be made available for the whole workshop. Below are the details to participate remotely.

JCSDA Annual Science Meeting and Technical Review

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/877510181>

You can also dial in using your phone.

United States: +1 (312) 757-3121

Access Code: 877-510-181

First GoToMeeting? Let's do a quick system check: <https://link.gotomeeting.com/system-check>

We look forward to seeing you in Boulder next week!

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Day 1: Wednesday, May 30, 2018

8:00 AM – 9:00 AM	REGISTRATION AND CONTINENTAL BREAKFAST
9:00 AM – 9:20 AM	Welcome from the Management Oversight Board – Robert Atlas
9:20 AM – 10:00 AM	Joint Center for Satellite Data Assimilation: Overview – Thomas Auligne
10:00 AM – 10:30 AM	Agency Partner Perspectives – NOAA/NESDIS, NOAA/NWS, NOAA/OAR, USAF 557th, NASA/GMAO, NRL (Timing TBD)
10:30 AM – 11:00 AM	COFFEE BREAK
11:00 AM – 12:00 PM	Agency Partner Perspectives – NOAA/NESDIS, NOAA/NWS, NOAA/OAR, USAF 557th, NASA/GMAO, NRL (Timing TBD)
12:00 PM – 13:00 PM	WORKING LUNCH
	<b>SESSION 1: CLOUDS AND AEROSOLS</b>
13:00 PM – 13:25 PM	The Use of Sky Cameras to Validate and Augment Satellite / Radar based Cloud Assimilation – Steve Albers, CIRA, NOAA/ESRL
13:25 PM – 13:50 PM	Overall Use of Satellite Data in the RAP / HRRR Models, including Cloud Products, Convective Initiation Indicators, Lightning Data – Steve Weygandt, NOAA ESRL/GSD
13:50 PM – 14:15 PM	Using Multi-Sensor Aerosol Optical Depth Retrievals to Improve Infrared Radiance Assimilation / Assimilation – Aaron Naeger, University of Alabama, Huntsville
14:15 PM – 14:45 PM	COFFEE BREAK
	<b>SESSION 2: DIAGNOSTICS</b>
14:45 PM – 15:10 PM	Impact of Observing Systems Project Overview – Francois Vandenberghe, JCSDA
15:10 PM – 15:35 PM	Efficient Data Selection Method for NWP Using Ensemble Forecast Sensitivity to Observations – Tse-Chun Chen, University of Maryland
15:35 PM – 16:00 PM	Estimation and Online Correction of Systematic Errors in the GFS Using Analysis Increments – Kriti Bhargava, University of Maryland
16:00 PM – 17:30 PM	<b>POSTER SESSION</b>
19:00 PM	Group Evening Activity (optional) – The Bohemian Biergarten

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Day 2: Thursday, May 31, 2018

<i>8:30 AM – 9:00 AM</i>	<i>CONTINENTAL BREAKFAST</i>
	<b>SESSION 3: ADVANCES IN DATA ASSIMILATION METHODOLOGIES</b>
<i>9:00 AM – 9:25 AM</i>	JEDI Project Overview – Yannick Tremolet, JCSDA
<i>9:25 AM – 9:50 AM</i>	FV3-JEDI: Progress Report and Future Plans – Daniel Holdaway, JCSDA
<i>9:50 AM – 10:15 AM</i>	SOCA-JEDI: Progress Report and Future Plan – Guillaume Vernieres, JCSDA
<i>10:15 AM – 10:40 AM</i>	Covariance Localization in Strongly Coupled Data Assimilation – Takuma Yoshida, University of Maryland
<i>10:40 AM – 11:10 AM</i>	<i>COFFEE BREAK</i>
	<b>SESSION 4: NEW AND IMPROVED OBSERVATIONS</b>
<i>11:10 AM – 11:35 AM</i>	New and Improved Observations (NIO) Project Overview – Hui Shao, JCSDA
<i>11:35 AM – 12:00 Noon</i>	Assimilation of Himawari-8 AHI into NCEP GSI – Ling Liu, NESDIS/STAR/JCSDA
<i>12:00 Noon – 13:00 PM</i>	<i>Working Lunch</i>
	<b>SESSION 4: (CONTINUED)</b>
<i>13:00 PM – 13:25 PM</i>	Observation Capabilities - Vertically Resolved Wind Profiles from Space-Based Doppler Wind Lidar: Plans and Current Capabilities – Sara Tucker, Ball Aerospace
<i>13:25 PM – 13:50 PM</i>	Assimilation of CYGNSS and GPM Satellite Data in Improving Hurricane Forecasting – Zhaoxia Pu, University of Utah
<i>13:50 PM – 14:15 PM</i>	Assimilation of Clear -/ All-Sky Himawari-AHI Radiances for Convective-Scale Forecasting – Zhiquan Liu, NCAR
	<b>SESSION 5: ALL-SKY AND ALL-SURFACE RADIANCE ASSIMILATION</b>
<i>14:15 PM – 14:40 PM</i>	Assimilation of Clear-Sky Water Vapor Radiances into a Warn-on-Forecast System – Thomas Jones, CIMMS/NSSL
<i>14:40 PM – 15:05 PM</i>	Satellite Radiance Assimilation in the Rapid Refresh Model System, Overall Impacts and Use of Direct Broadcast and ABI Data – Haidao Lin, CIRA/CSU, NOAA/ESRL/GSD

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15:05 PM – 15:35 PM	COFFEE BREAK
	<b>SESSION 5: (CONTINUED)</b>
15:35 PM – 16:00 PM	Assimilation and Evaluation of the AFWA SNODEP Product in NCEP Operational FV3GFS Systems – Jiarui Dong, IMSG at NOAA/NCEP/EMC
16:00 PM – 16:25 PM	Assimilation of Radiance Data Over Land with Addition of Emissivity as Analysis Variable into GSI – Biljana Orescanin, NOAA/NESDIS/STAR/JCSDA
16:30 PM – 17:30 PM	<b>PANEL DISCUSSION: How to Measure the Success of the JCSDA</b>
19:00 PM	Group Evening Activity (optional) – The Rayback Collective

### Day 3: Friday, June 1, 2018

8:30 AM – 9:00 AM	CONTINENTAL BREAKFAST
	<b>SESSION 6: GNSS RADIO OCCULTATION</b>
9:00 AM – 9:25 AM	Assimilation of KOMPSAT-5 GPSRO in GSI 4D-EnVar Assimilation System – Suryakanti Dutta, JCSDA/UCAR
9:25 AM – 9:50 AM	Radio Occultation Observation Operators for Data Assimilation using Spire Bending Angle Data – Razvan Stefanescu, Spire Global
9:50 AM – 10:15 AM	Error Characteristics of KOMPSAT-5 GPS RO Bending Angle Data / NIO – Hailing Zhang, UCAR/COSMIC
10:15 AM – 10:45 AM	COFFEE BREAK
	<b>SESSION 7: COMMUNITY RADIATIVE TRANSFER MODELING</b>
10:45 AM – 11:10 AM	The JCSDA Community Radiative Transfer Model, Benjamin Johnson, JCSDA
11:10 AM – 11:35 AM	CRTM Support to GMAO, Validation and Coefficient Generation, Isaac Moradi, NASA GMAO
11:35 AM – 12:00 PM	Optimizing the CRTM for Improved Performance of All-Sky Radiance Data Assimilation – Thomas Greenwald, University of Wisconsin-Madison
12:00 PM – 12:30 PM	Open Discussion and Wrap-up
12:30 PM	Adjourn

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### Poster Roster

<b><i>Authors</i></b>	<b><i>Title</i></b>
<u><i>Amanda Back</i></u>	Assimilation of GOES-derived Cloud-top Cooling Rate as a Precursor to Convection in the Rapidly Updating HRRR Atmospheric Model
<u><i>William F. Campbell</i></u>	A New Channel Selection Method for Satellite Instruments with Correlated Observation Error
<u><i>Mayra Oyola,</i></u> <u><i>Benjamin C. Ruston,</i></u> <u><i>James R. Campbell,</i></u> <u><i>Edward J. Hyer, &amp;</i></u> <u><i>Peng Xian</i></u>	Aerosol Impact on Navy Data Assimilation for Operational Weather Forecasting: First View
<u><i>Mariusz Pagowski,</i></u> <u><i>A. da Silva, S. McKeen,</i></u> <u><i>S. Kondragunta, &amp;</i></u> <u><i>G. Grell</i></u>	Assimilation of Satellite AOD Retrievals to Improve Aerosols Forecasts with FV3-GOCART
<u><i>Patrick Stegmann</i></u>	Computation of Microwave Scattering Properties for Frozen Hydrometeors in the CRTM as of 2018
<u><i>Benjamin C. Ruston,</i></u> <u><i>Nancy Baker,</i></u> <u><i>William F. Campbell,</i></u> <u><i>Bryan Karpowicz,</i></u> <u><i>Rolf Langland,</i></u> <u><i>Steve Swadley, &amp;</i></u> <u><i>Song Yang</i></u>	Examination of GOES-16 ABI; MeteoSat-11 SEVIRI; ATMS and CrIS from NOAA20; and KOMPSAT-5 in a Global NWP System
<u><i>Houjun Wang</i></u>	WDAS – Current Status and Challenges of Satellite Data Assimilation for Space Weather Applications
<u><i>Milija Zupanski</i></u>	ATMS All-Sky Radiance Assimilation and Plans for GOES-16 GLM Assimilation on HWRP
<u><i>Xin Zhang</i></u>	Building a Unified Development/Testing/Documentation Workflow for the JEDI Project
<u><i>Tong Zhu</i></u>	The Release of CRTM REL-2.3.0. and Preparing the Updates of REL-2.3.1
<u><i>Ming Chen</i></u>	Advances of JCSDA Community Surface Emissivity Models (CSEM)