

Climate Working Group

Action and recommendations from ITSC-20

Co-Chairs:

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- **14** participants at the meeting

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- main tasks:
 - Report on actions Climate-2 to Climate 5 from ITSC-19 by Nadia Smith
 - Updating status of all open actions from ITSC-19
 - Discussion of CGMS HLPP topics relevant for Climate WG

Remaining Actions from ITSC-19

Action Climate-1 from ITSC-19

NESDIS (Lihang Zhou) to provide a focus day of AIRS and IASI data that are spectrally convolved to CrIS data.

Status: closed

- Data can be made available. Please contact Lihang Zhou or Likun Wang for access to the data.

Action Climate-2 to Climate-5 from ITSC-19 on inter-comparison study

Status: closed

- SSEC performed an instrument inter-comparison of retrieval products from AIRS, IASI and CrIS. One algorithm was used to retrieve profiles of temperature from all three instruments.
- Contact Nadia Smith and go to http://cimss.ssec.wisc.edu/cspp/uwhsrtv_edr_v1.3.shtml for details
- Recommend to follow up in the Products and Software Working Group (PSWG) and to feed back to Climate WG

Remaining Actions from ITSC-19 – ctd.

Action Climate-9 from ITSC 19 on the update of Climate WG webpage:

Status: closed

- It is proposed to formally close the action from ITSC-19 and re-word it as a new action from ITSC-20 to better reflect the current status of the developments at SSEC.
- SSEC plans to update the ITWG page (at the same time as the update of their SSEC page). This will include the change to a new Content Management System (Wordpress), which will allow the group to update content on the webpage on their own.

Actions and Recommendations from ITSC-20

Action Climate-1 from ITSC 20 on WG Co-Chairs

Status: open

Coordinate the update of the webpage of the Climate WG once the new Content Management System (CMS) is available and the ITWG pages as well as the subgroup pages have been migrated to the new systems.

Action Climate 2 on Climate WG Co-Chairs

Status: open

A specific mailing list for the Climate WG will be set up with help from Leanne Avila

Actions and Recommendations from ITSC-20

Tied up to CGMS HLPP:

COORDINATION OF OBSERVING SYSTEMS AND PROTECTION OF ASSETS

- Usage of VTPR (Vertical Temperature Profile Radiometer)

Recommendation Climate 1 to community

- Encourage to work on VTPR to recover the data and make them ready for climate study
- Contact Lei Shi and go to website
<http://www.ncdc.noaa.gov/oa/rsad/vtpr.html> for information

Actions and Recommendations from ITSC-20

➤ Traceability of input data for reanalysis

ECMWF generates statistics on data used in the reanalysis; these feedback statistics will be made available via the ECMWF webpage

Recommendation Climate 2 to reanalysis providers

Reanalysis providers should provide input data information together with their data sets

Action Climate 3 on Niels Bormann

Niels Bormann to check which of the data (satellite data and synoptic data) used as input for the ECMWF re-analysis can be made available to the public

Status: closed

Niels Bormann has confirmed that all observations that will go into the ERA5 reanalysis will be made publically available through ECMWF's data portal (in ODB format or ASCII) and will contain source information where available

Actions and Recommendations from ITSC-20

- Digital Object Identifiers
 - The group agreed that having a central web-site summarizing the input data and its location for reanalysis is helpful
 - WMO-OSCAR is a possible candidate for that
 - Encourage data providers to publish the existing data records with a DOI

Recommendation Climate 3 to data providers

To encourage CGMS satellite operators to assign DOIs to their data sets of heritage instruments and provide these DOIs to a central portal like WMO-OSCAR

Actions and Recommendations from ITSC-20

➤ Validation campaigns

Recommendation Climate 4 to satellite providers

Measurement campaigns such as the ARM sites are important for satellite validation. The Climate WG supports such campaigns and encourages satellite providers to provide sufficient funding for these activities for current and upcoming sensors

Action Climate 4 on Cheng-Zhi Zou

Status: open

Provide a brief description of and a URL link to the ARM project on the WG webpage

Actions and Recommendations from ITSC-20

Tied up to HLPP: ENHANCE THE QUALITY OF SATELLITE-DERIVED DATA AND PRODUCTS

- Satellite climate data record developed by multiple groups from either the same instrument on multiple satellites or from different instruments for a same variable can help improving the CDR accuracy through mutual validation activities.

➤ Heritage HIRS channels

Recommendation Climate 5 to CDR developers

- Encourage the community to develop channel based HIRS temperature CDRs to compare with MSU/SSU/AMSU CDRs
- Also extends HIRS radiances to AIRS/IASI/CrIS using existing or developing new convolution algorithms between them

Actions and Recommendations from ITSC-20

➤ Spectral gaps in CrIS

It was noted that CrIS on the current SUOMI NPP has spectral gaps, causing issues when comparing and merging with IASI instrument. Filling spectral gaps has been proposed to the Program Office for the future CrIS on JPSS. Climate WG endorses this proposal

➤ Merging of AIRS/IASI/CrIS with SSU

Action Climate 4 on Cheng-Zhi Zou

Status: open

NESDIS to look for possibility to merge AIRS/IASI/CrIS with existing SSU CDR for inter-comparisons with the SSU/AMSU merged products

Actions and Recommendations from ITSC-20

- Inter-calibration activities
 - To coordinate the provision of information on inter-calibration activities for Level-1 FCDR data and make the information available via the Climate WG webpage
 - EU H2020 FIDUCEO to generate FCDRs for four relevant heritage instruments: AVHRR-GAC, HIRS, microwave humidity sounders, and Meteosat First Generation
 - To inquire if the EU H2020 FIDUCEO project sees themselves in the role as coordinator of, or contributor to an assessment of the FCDRs covered by FIDUCEO (AVHRR-GAC, HIRS, microwave humidity sounders).

Action Climate 5 on Rob Roebeling

Status: open

Provide information to the Climate WG webpage on different inter-calibration activities for Level-1 FCDR data, e.g. HIRS, AMSU, AVHRR, etc.

Actions and Recommendations from ITSC-20

Recommendation Climate 6 to NESDIS

NESDIS to make reanalysis community aware of the new SSU level-1 radiance dataset, which includes better handling of space view anomaly effects.

- Logging Satellite Calibration Anomaly Events
 - WG discussed importance of logging satellite calibration anomaly events on CDR development and reanalysis data assimilations
 - Rob Roebeling indicates that the topic has been taken up by CGMS and GSICS since 2011, through a series of actions and recommendations
 - Climate WG endorse these recommendations and actions

Actions and Recommendations from ITSC-20

- Monitoring of instrument anomaly events and its long-term trend will help the reanalysis developers to understand anomalies in satellite input data for reanalysis. The already available webpage from the NOAA ICVS (Integrated Calibration and Validation System) will be useful for this

Recommendation Climate 7 to satellite providers

- The WG encourage other satellite agencies to also establish websites to monitor instrument calibration anomalies and their long-term trends.

Actions and Recommendations from ITSC-20

Tied up to CGMS HLPP: CROSS CUTTING ISSUES AND NEW CHALLENGES

- NESDIS found that the long-term time series and trends in the stratospheric temperatures simulated by the advanced chemistry-climate models agreed extremely well with the stratospheric temperature climate data record derived from the SSU and AMSU measurement, suggesting that the chemistry-climate models may have reached a level that they can simulate climate changes in the past with good reliability
- This provides improved confidence on using climate models for prediction and projection of the future climate changes
- Such a capability in climate modeling will help the society to get informed climate change information for informed decisions on mitigation and adaptation to climate changes

Actions and Recommendations from ITSC-20

Way forward of Climate WG of ITWG

- The Climate WG members discussed the current scope of the Climate WG at ITWG and the possible developments in the future.

Action Climate 6 on WG members

Status: open

The Climate WG needs to discuss on focus and aim of the Climate WG within ITWG. Group members are asked to provide their thoughts via the Climate WG mailing list prior to the next ITWG meeting.

- Possible areas mentioned during the WG discussion include CDR development linked to NOAA CDR Program and EU H2020 FIDUCEO Project; CDR analysis linked to GaIACLIM Project; and comparison/validation of existing CDRs.