

# GSICS Annual Meeting 2021

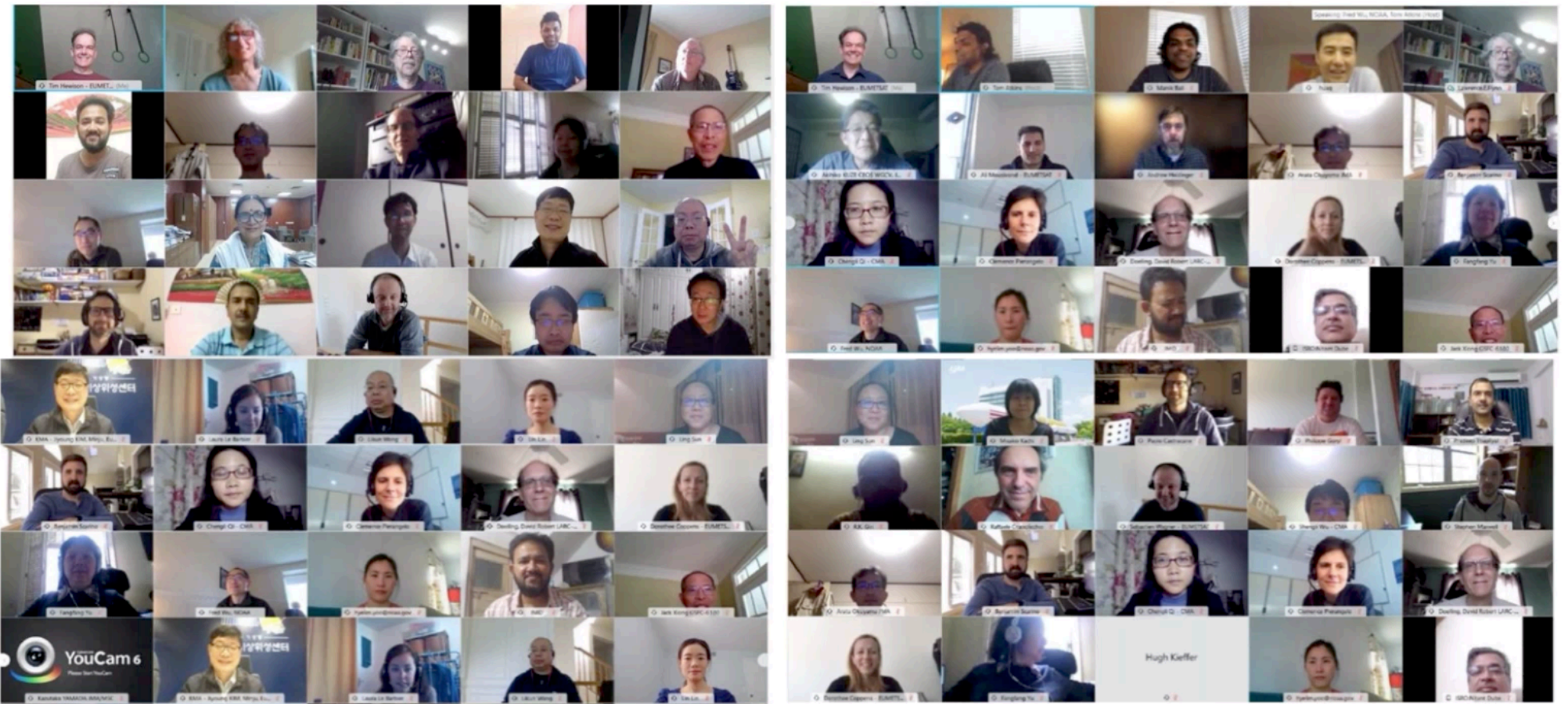
The (Global Space-based Inter-Calibration System) GSICS Annual Meeting 2021 held on-line, 29 March – 2 April 2021.

The Meeting had the following sessions:

- Plenary -I (29 March)
- Plenary-II (30 March)
- Breakout Sessions (31 March - 1 April). GUV, GVISNIR, GIR, GMW, GDWG
- Plenary Cross Cutting (2 April)

Info and presentations can be found at:

<http://gsics.atmos.umd.edu/bin/view/Development/Annual2021>



## GSICS Main activities and recommendations by subgroups

<b>VIS/NIR Group</b>
<p>GSICS recommends N20 VIIRS as the VIS/NIR calibration reference:</p> <ul style="list-style-type: none"> <li>• N20 VIIRS not recommended for its absolute calibration</li> <li>• N20 VIIRS recommended because of its on-orbit performance</li> <li>• Both NASA and NOAA teams monitoring N20 VIIRS performance</li> </ul>
DCC invariant target calibration into the SWIR bands (GSICS methodology)
OLCI in tandem calibration transfer
TRUTHS mission Status
TSIS-1 HSRS spectra Discussion of recommending the TSIS HSRS spectra.
GSICS Lunar Model Comparison Exercise

<b>MW Group</b>
FCDR Challenges and Improvements.
Instrument performance monitoring and uncertainty characterization improvements.
SI Traceability and Adopting Microwave Standard Instruments.
There has been considerable Microwave Subgroup Wiki development
A hyperspectral microwave sounder being considered by the UK Met Office that could be a boon to inter-calibration and sounding alike.
Development of an AI-based radiative transfer model
Landing Page Streamlined, Separate Microwave Sounders and Microwave Imagers Wiki Pages Created, Individual Wiki Pages Created for Each Subgroup Meeting that include a Meeting Summary, Presentations, and Minutes.

## GSICS Main activities and recommendations by subgroups

### IR Group

#### Continued expansion of group

- From GEO/LEO inter-calibration to GEO/GEO, LEO/LEO, other datasets
- Imager/Sounder
- Hyperspectral Sounder inter-calibration
- Reprocessing, New Measurements, Gap Filling, Collocation
- More ideas, new collaborations, exploit other ongoing activities of relevance to GSICS
- Software, dataset, best practice, methods

### UV Group

The launch of the Korean GEMS instrument into GEO orbit provides new opportunities for LEO/GEO comparisons. NIER has formed a Validation Team with broad international membership.

Collaboration is taking place on solar spectra studies, including reference solar, solar activity, instrument degradation, and wavelength scales. We have been asked to provide a recommendation on the Reference Solar at [https://lasp.colorado.edu/lisird/data/tsis1\\_hrsr](https://lasp.colorado.edu/lisird/data/tsis1_hrsr)

Groups around the world are developing multi-instrument climate data records for Ozone from UV sounders with diverse approaches to inter-instrument calibration.

The Vis/NIR group will dedicate one of their monthly meetings to Rayleigh Scattering and another to PICS.

NOAA has modified the V8TOz algorithm to compare the calibration of discrete UV reflectivity and total ozone channels. Will be using it to compare channel biases among OMPS, GOME-2, TropoMI, GEMS and EPIC measurements.

# GDWG group

- Data working group is actively working on GSICS products and deliverables dissemination/standardization and acceptance.
- Tools are being developed to connect with users of GSICS products and deliverables.
- Collaboration Server/GPRC/Landing Pages are playing a crucial role in communicating the satellite monitoring to the community.
- Tools, such as Google Colab/Product Status System, empower the users to dive into the products directly from the browser and usher in a collaborative development ecosystem in real time.

# Summary of links to GSICS tools

1. Bash script to download GSICS Data  
<http://gsics.atmos.umd.edu/bin/view/Development/DownloadGSICSProducts>
2. Series of notebooks to read, view and process GSICS Data and Deliverables from the browser in a collaborative ecosystem
  - DCC Product [notebook](#)
    - This notebook reads DCC products and plots and lists them
  - GIRO SRF [notebook](#)
  - GSICS Product RAC [notebook](#) and NRT [notebook](#)
3. Plotting Tool <http://gsics.tools.eumetsat.int/plotter>
4. GSICS Product Catalog: <https://www.star.nesdis.noaa.gov/smcd/GCC/ProductCatalog.php>
5. GSICS Product Status registration: Register [here](#)



# Quarterly

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## Articles

**Part-II: State of Observing System Status of GSICS monitored instruments**  
By Mitch Goldberg (NOAA) and Manik Bali (ESSIC/UMD)

**NOAA 2020 GSICS Annual Report for GOES-16/17 ABI**  
By Xiangqian Wu, Fangfang Yu and Hye Lim Yoo, NOAA

**EUMETSAT 2020 GSICS Annual Report for Meteosat/SEVIRI**  
By Tim Hewison, EUMETSAT

**On-orbit calibration of Russian satellite instruments: new issues**  
By Rublev A., Ju. Kiseleva, A. Uspensky, V. Golomolzin (State Research Center for Space Hydrometeorology "Planeta", Roshydromet), D. Gayfulin and M. Tsyrunikov (Hydrometcenter of Russia)

**The radiometric performance of GEO-KOMPSAT-2A**  
By Eunhyu Kim, Minju Gu and Dohyeon Kim NMSC/KMA

**JMA 2020 GSICS Annual Report for Himawari-8/AHI**  
By Arata Okuyama, JMA

**Performance status of GSICS Reference IASI A/B/C**  
By Laura Le Barbier, Clémence Pierangelo, and Mathilde Faillot, CNES

**Vis/NIR subgroup proposes TSIS-1 HSR5 as the GSICS recommended solar spectrum**  
By Thomas C. Stone, USGS, Odele Coddington, LASP, Juseon Bak, PNU-IES (Pusan National University, Institute of Environmental Studies),

## Part-II: GSICS Annual State of Observing System Status of GSICS monitored instruments.

By Mitch Goldberg (NOAA) and Manik Bali (ESSIC/UMD)

Did the pandemic impact the Space component of the WMO state of observing system in the past year? In this (Part-II) of the special issue on the State of Observing System, we assess the performance (in the year 2020) of the Satellites that contribute to the Space Component of the Observing System and were monitored using GSICS methodologies at time when GSICS member agencies operated on reduced resources due to the pandemic situation.



Image Courtesy WMO: Shows Satellites of Space observing System  
<https://public.wmo.int/en/programmes/wmo-space-programme>

A quick review of the GSICS Processing Research Centers

(<https://gsics.wmo.int/en/product-services-and-technical-information>) maintained by GSICS members reveal that in the past year GSICS members kept moving forward and are not monitoring instruments on over 26 satellites and shared the biases in real time. The monitored satellites belong to the family of GOES, JPSS, Meteosat, Metop-HIRS/IASI, MSU-MR, IKFS, MSU-GS, FY, GK-2A, Himawari-8 and

article report that there is no noticeable change in GOES -16/17 bias in 2020. Figure 1 shows similarity between the mean bias for MSG-1/2/3/4 and Himawari-8 over their spectrum for the year 2020 and subsequent article by Hewison show that MSG series retained low bias drifts. Earlier Hu et al. 2021 have shown FY-4A Agri biases range -3.8K -0.1265 K in the IR spectrum when IASI-B is used as a reference.

The next article details the performance of Himawari-8 by Agata Okuyama

**13:00 – 13:30**

**3.3: WGCV and GSICS Coordination**

P. Goryl

- GSICS annual meeting (March 2021) report
- Decision: Potential collaboration on Rayleigh intercomparisons and a joint discussion on solar irradiance
- Discussion: Recommendation of the TSIS HSRS solar spectra, which the GSICS community has endorsed