

GSICS VIS/NIR Jan 23, 2025, Monthly Web Meeting

Daile Zhang, (U. North Dakota) Validation and intercomparison of Lightning Products.

Daile presented the intercomparison of the geostationary GOES-16 (GLM) , GOES-18 (GLM), MTG-I1 (LI), and FY4A (LMI) and ISS-LIS sensors, with respect to spatial coverage, parallax correction. To provide a global consistent dataset the inter-calibration regions are for oblique angles

There were some dips in the radiance profile on all 4 MTG-I1 LI sensors, Fred offered a suggestion. Martin asked if there was a way of detecting meteors with Lightning mappers. Fred asked why the FY-4A LMI had events over the poles and equator, the artifacts have not been removed.

Banghua Yan (NOAA), Long-Term Inter-Sensor Radiometric Bias Stability Assessments across SNPP, NOAA-20, NOAA-21, and Legacy NOAA/Metop AMSU-A Instruments

Banghua highlighted the NOAA Integrated Calibration & Validation System (ICVS) for Long-Term Monitoring (LTM) Near-Real Time (NRT) and Long-Term (LT) instrument performance and calibration stability monitoring web pages. The following NPP and NOAA instruments are being tracked: ATMS, OMPS, CrIS, VIIRS and AMSU. 4 Calibration methods are combined, 1) RTM over clear-sky, 2) 32 day average, 3) SNOs, 4) sensor double differencing via SNO. 3 OMPS calibration techniques were compared, DCC, inter-calibration GOME-2 and Peter Valks also using GOME-2. The NPP CrIS navigation anomaly and correction was verified using SNOs with GOES-16 ABI.

Dave asked a question if the VIIRS radiances were being monitored using the 32-day method. The data volume was too large to implement, Banghau thinking about a tropical mean.

Xi Shao, (NOAA), Radiometric Stability and Consistency of VIIRS VGAC RSB over PICS.

Sean presented the NOAA VGAC effort to downscale the VIIRS data into a similar spatial resolution of the legacy AVHRR format. For VIIRS stability monitoring several PICS over the Saharan and Arabian deserts, Dome-C and Greenland are used. SNPP, NOAA-20, and NOAA-21 VIIRS SBAF were computed over Dome-C and Libya Desert. The VIIRS solar diffuser F factor, Lunar, DCC, and SNO stability time series are fused by using Kalman Filter to update the F factor. The yearly drifts evaluated by VIIRS channel and by PICS. An average drift rate was computed from the reprocessed VGAC dataset. Annual drifts are less than 0.1% per year. The NOAA-21 and NOAA-20 VIIRS channel inter-calibration differences are also compared by PICS site and within 2%.

Dave mentioned would like to assimilate best practices over PICS for the GSICS effort.

Vrinda Desai (North Carolina State University), Historical GOES 8-15 FCDR strategy

Vrinda presented the NOAA effort to archive the historical SMS-1, GOES imager data FCDR effort. The image restoration, image artifact (stray light) mask, calibration, navigation, formats were discussed. She compared 8 GOES calibration coefficients from various sources. There will be two products, one for the general user, and one for the super user. The super user would get all 8 calibration coefficients. She asked what the calibration coefficients the GSICS community recommended to be used in the general FCDR product.

Dave mentioned that the best solution would be for all calibration methods to agree. However, each retrieval algorithm would have their unique calibration coefficients optimized for their retrieval, since they utilize a different part of the dynamic range. GSICS is still working on providing GSICS products for the VIS/NIR.