

GSICS VIS/NIR Sept 12, 2024 Monthly Web Meeting

Patrice Henry and Beatrice Berthoelot (CNES), PICSCAR Initiative presentation.

Patrice and Beatrice gave an overall summary of the CEOS community PICSCAR initiative. The PICSCAR characterizes Saharan desert sites for stability analysis and imager inter-calibration efforts. The following topics are being improved, BRDF development, spectral characterization, atmospheric and aerosol profiles, temporal stability, and combining multiple sites. This was an overview discussion, but early next year a longer discussion ~2 hours involving both the GSICS and CEOS communities web meeting will be planned to foster synergy between the two communities. GSICS would like to have a PICS best methodology as part of the multiple calibration strategy, that involves, lunar, DCC, PICS, and other calibration strategies.

Dave asked about the BRDF if it is at TOA or at the surface, it is at the surface. Ali asked if aerosols are taken into consideration in the atmospheric correction and why there is a lot of noise in the Aqua-MODIS stability plots. Beatrice answered that it is due to the large view angle observations. Dave asked what the greatest challenge is in inter-calibrating satellite imagers using PICS. Beatrice answered that the PICS spectral signature in computing the PICS SBAF.

Fangfang Yu (NOAA), GOES-19 ABI preliminary performance

Fangfang gave a preliminary assessment of the GOES-19 ABI performance. GOES-19 was launched in June 2024, it should be made operational in the GOES-East location in May 2025. A more comprehensive performance review will be given at the January 2025 AMS meeting. A very nice youtube video was shown.

Dave asked about the solar diffuser consistency on GOES-16, 17, 18, 19 series. Fred stated that the initial solar diffuser calibration differed by up to 10% and was mainly due to the ground characterization. Once on orbit the solar diffusers were well behaved and stable. Masaya asked how often the GOES-19 solar diffuser measurements will be taken. Fred stated, Every two weeks in the beginning and then scaling back to quarterly.

Daisuke Taniguchi (National Astronomical Observatory of Japan JSPS fellow), Calibrating the Himawari-8/9 imager using stars

Daisuke identified Rigel and Procyon (non-variable) stars useful for Him-8 and Him-9 AHI calibration. These stars are used for navigation and are part of the AHI image that contains the space view, which are very close to the limb of the Earth. At the edge of the Earth the AHI image the boundary is not sharp as it transitions from earth view to deep space. These background image to image variability and must be subtracted to get the “true” star brightness radiance, which is defined by the 4 center pixels, and treated as a point source. He noticed a difference between 3-8% between Him-8 and Him-9 AHI radiances depending on channel.

Daisuke will talk with Masaya about AHI image processing and space clamp algorithms to describe the background noise. Fred mentioned that a possibly reason why Rigel and Procyon AHI band 3 (0.65 μ m) calibration differed was the pixel resolution, which is 0.5km compared

with the 1-km pixel resolution for the other visible bands. Jason recommended using Earth's ephemeris data to correlate the background noise. Tom mentioned that the moon is not taken as a point source and the lunar algorithm would not apply to stars. Daisuke would like to reach out to anyone with ideas to improve his algorithm and is willing to present at a future GSICS web meeting to discuss any improvements.

Tom Stone and Fangfang (USGS, NOAA), overview of the GSICS LSICS implementation and status

Tom Stone presented the overview of the GSICS LSICS implementation and status. Tom mentioned that the slides presented were from Fangfang. There was no discussion after the presentation as the meeting was close to the 2-hour limit.