**GSICS VISNIR Wednesday meeting notes for March 31, 2021**

**DCC invariant target calibration into the SWIR bands (GSICS methodology)**

Raj Bhatt from NASA Langley presented the recent refinements to the GSICS DCC calibration algorithm to extend its usage to SWIR bands. He showed the VIIRS based DCC BRDFs for SWIR wavelengths and illustrated their effectiveness in reducing the temporal natural variability in the DCC time series. The use of DCC for inter-comparison between MODIS and VIIRS instruments without any coincident and collocated matches was also discussed.

Fred Wu commented on the absence of low-reflectance tails in the monthly DCC PDFs of the SWIR bands. In visible channels, the DCC reflectivity is determined by the cloud optical depth. However, in SWIR bands, the DCC ice particles are absorptive in nature, which affects the distribution of the DCC reflectance causing the tail on the right side of the PDFs.

**OLCI in tandem calibration transfer**

Nicolas presented on the development of DCC statistics for absolute inter-calibration between OLCI-A and OLCI-B from the tandem dataset. He suggested the inflexion point along a fit to the DCC pixels as another good statistics for DCC calibration.

**Analyzing N20 VIIRS Calibration Difference between NASA and NOAA**

Sirish Uprety (on behalf of NOAA VIIRS SDR team) presented the calibration consistency between the two NOAA-20 data sets available from NOAA VIIRS SDR team and NASA VCST. NOAA operation calibration has used constant F-factors since April 2018, where NASA F-factors can slightly change over time (small-magnitude jumps). NASA and NOAA RSB calibration are mostly within 0.2%. The DCC-based assessment shows no significant temporal trend in the calibration. NOAA provides a dedicated webpage to support the GSICS activities regarding the two VIIRS datasets inter-comparison. Geolocation between the NASA and NOAA VIIRS products agree within sub-pixel levels.

**Discussion of future monthly web GSICS VIS/NIR meetings**

Dave Doelling discussed the recommendation of using NOAA-20 VIIRS as a next GSICS reference for RSB. Tom Stone supported the use of N20-VIIRS as a reference, given that it is extremely stable based on multiple assessments including the Lunar observations.

**Decision:** GSICS will transition to using NOAA-20 VIIRS as a next reference instrument for calibrating reflective solar channels. A comprehensive analysis is needed to estimate the biases between Aqua-MODIS and NOAA-20 VIIRS for a seamless transition from MODIS to VIIRS.

**Decision on web meeting:**

Both Tom and Fred supported monthly web meetings for the VIS/NIR group.

VIS/NIR group will have a monthly web meeting on a dedicated week of month that won’t conflict with other sub-groups monthly meetings. Day, week, and time will be finalized later.

**TRUTHS mission Status** (Philippe Goryl)

TRUTHS is currently planned for a polar orbit. Primary objectives are Climate benchmarking, inter-calibration, and SI traceable solar/lunar spectral measurements between 0.32 to 2.4 𝝁m

**TSIS-1 HSRS spectra**

Odele Coddington presented TSIS-1 HSRS, a new, high-resolution solar spectrum with an unprecedented accuracy of 0.3-1.3% for wavelengths between 202-2730 nm. The HSRS was developed using a spectral ratio method that adjusts the high spectral resolution datasets to the absolute radiometric scale of the lower resolution TSIS-1 SIM data. Multiple variants of HSRS are available for various applications. TSIS-1 SIM measurements are SI traceable (0.41% uncertainty in UV and 0.24% for VIS/NIR) and provide an integrated solar constant value that is in good agreement with the TSI value of 1361.5 W/m2. She also discussed the HSRS-FS, an extension of the TSIS-1 HSRS to cover 100% of TSI.

*Unfortunately, Raj Bhatt could not attend anymore of the nearly 4 hour meeting at this point*

**Lunar presentations.**

Tom and Seb did you want to add anything?

**Discussion of recommending the TSIS HSRS spectra.**

Tom stated that the HSRS spectra was very consistent with the lunar reflected spectra

GSICS VIS/NIR group would encourage the CEOS IVOS group to also recommend the TSIS HSRS spectra.

Coordinate with the CEOS IVOS group to have her present at their next meeting

Larry would like to compare the HSRS spectra with other UV spectra before recommending and giving a UV perspective.

No reservations from the participants at large were noted.