Weekly Report

SCSB/CISESS
Cooperative Research Program Division (CoRP)
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Products and Applications

Algorithm Update for Microwave Integrated Retrieval System: The MiRS science team (including CISESS staff Chris Grassotti, Yong-Keun Lee, Jun Dong and Yongzhen Fan) officially released the v11.6 Delivery Algorithm Package (DAP). Some important features of this DAP include:

- Extension of MiRS preliminary full processing capability to JPSS-2 (NOAA-21). This is a pre-launch capability, which will be updated once real data are received after launch. Radiometric bias corrections are identical to those for NOAA-20.
- Updates to the snowfall rate (SFR) algorithm software including (1) updates to source code to make the package more fully modular and consistent with MiRS interfaces, and (2) updates to static coefficient files leading to improved SFR estimates.
- Modification to the retrieval approach of cloud liquid water, resulting in reduction of false alarms of light rainfall over land.
- Updates to output netCDF file global attributes metadata to bring into better compliance with NDE guidelines and CF conventions.
- Inclusion of NDE-specific driver scripts (SCS) for the following satellites: GPM, Metop-A, Metop-B, Metop-C, SNPP, NOAA-20, and JPSS-2 (NOAA-21). This anticipates eventual processing of GPM, Metop-B and C in the Cloud environment (SNPP, NOAA-20, and JPSS-2 are currently planned for processing at NDE).

Example of MiRS retrieval using proxy JPSS-2 (NOAA-21) data. Shown are global map of TPW retrieval (left) and comparison with ECMWF analysis TPW (right). MiRS extension to JPSS-2 is included in the v11.6 DAP.
Inclusion of Sentinel-3 SLSTR-SST into the Blended SST Analysis: CISESS Scientist Andy Harris has added measurements from the Sea and Land Surface Temperature Radiometer (SLSTR) on the Sentinel-3 satellite to the Blended Geo-Polar Sea Surface Temperature (SST) products available on the CoastWatch/OceanWatch website. As part of this effort, he had to devise a new bias correction scheme for the SLSTR data.

GCOM AMSR-2 Rainfall for Isiais: The GCOM-W1 satellite captured several overpasses of Isiais as it made its trip up the U.S. east coast. These are shown below, where the current retrieval algorithm – GPROV2010V3 (left) – is compared to ground radar (MRMS) (middle). Although the retrieval from AMSR-2 was fairly reliable (right panel), it was noted some convective areas within the storm core were apparently missed (red regions). Note that the blue regions off-
shore are likely due to missing radar data. This will be improved upon through an algorithm upgrade currently in progress – GPROF2017 – which has shown to be vastly better than the current V2010V3 through testing over the past year.

(POC: Veljko Petkovic, Veljko.Petkovic@noaa.gov, Funding: JSTAR/GCOM).