GOES-19 ABI L2+ Sea Surface Temperature (SST) Release
Beta Data Quality
October 29, 2024
Read-Me for Data Users

The GOES-19 Advanced Baseline Imager (ABI) L2+ Sea Surface Temperature (SST) product was declared Beta maturity on Oct 1, 2024. No formal review was conducted because the algorithms are identical to the ones running with GOES-16/18, so the Beta declaration of the ABI L1b and CMI flows down to the ABI L2+ products.

The ABI L2+ SST products represent 1-hour composites over a Full Disk (FD) of the Earth. A full description and format of the SST product can be found in the Product Definition and User's Guide (PUG) Volume 5: Level 2+ Products, located on OSPO's GOES-R documents webpage: https://www.ospo.noaa.gov/Organization/Documents/goes-r.html. The algorithm used to derive the SST product from GOES-19 ABI observations is described in detail in the "GOES-R Advanced Baseline Imager (ABI) Algorithm Theoretical Basis Document for Sea Surface Temperature", available at https://www.star.nesdis.noaa.gov/goesr/documentation_ATBDs.php.

Beta maturity, by definition, means that:

- Rapid changes in product input tables / algorithms can be expected;
- Product quick looks and initial comparisons with ground truth data were not adequate to determine product quality;
- Anomalies may be found in the product and the resolution strategy may not exist;
- Product is made available to users to gain familiarity with data formats and parameters;
- Product has been minimally validated and may still contain significant errors; and
- Product is not optimized for operational use.

Beta users bear all responsibility for inspecting the data prior to use and for the manner in which the data are utilized. SST Team does not recommend using the Beta maturity SST product for any analyses. Users are strongly encouraged to consult the AWG SST lead for feasibility of the planned applications. The disclaimer "GOES-19 preliminary, non-operational data" should be used.

No major issues with the GOES-19 ABI thermal Infrared (TIR) bands (including the four long-wave IR window bands 11, 13, 14, and 15, centered at 8.4, 10.3, 11.2, and 12.3 µm, respectively and used in regression SST retrievals), have been identified at the time of this declaration. Based on initial evaluation, performance of GOES-19 and GOES-16/18 SSTs are comparable.

At the current stage, G19 SST may also be subject to the following limitations:

1. The SST product is sensitive to ABI calibration, navigation, and performance (e.g., striping).
2. Some hourly FD files may be missing or incomplete, due to scheduled post-launch-activities.
3. The data following the data gaps maybe of degraded and suboptimal quality.
4. Diurnal cycle in observed SST may be distorted and unusable for physical analyses.

5. The SST product may not be fully stable due to ongoing calibration/validation and fixes.

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