GOES-19 ABI L2+ Cloud Cover Layers (CCL) Release
Beta Data Quality
October 1, 2024
Read-Me for Data Users

The GOES-19 Advanced Baseline Imager (ABI) L2+ Cloud Cover Layers (CCL) product was declared Beta maturity on October 1, 2024. No formal review was conducted because the algorithm is identical to GOES-16/17/18. Beta declaration of the ABI L1b and CMI therefore applies to the ABI L2+ products.

The ABI L2+ Cloud Cover Layers product is a derived cloud fraction at a predefined spatial resolution and between specified cloud layers. It also retrieves total cloud fraction from surface to top of the atmosphere at the same resolution. It mainly utilizes cloud mask and cloud top products from upstream cloud mask and height algorithms to derive CCL information. CCL products include 6 cloud fractions: total fraction and 5 cloud layer fractions at predefined flight levels (SFC-FL050, FL050-FL100, FL100-FL180, FL180-FL240, and FL240-TOA). The horizontal resolutions for those fractions are 10 km for Full Disk (FD) and CONUS, and 4 km for mesoscale (Meso). The CCL products are generated for every FD, CONUS, and Meso sector.

A full description and format of the CCL 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 Cloud Cover Layers product from ABI observations is described in detail in the Algorithm Theoretical Basis Documents (ATBD): "AWG Cloud Cover Layer Algorithm". ATBDs are 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 are expected;
- Product initial looks and validation may not be fully 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 may have been minimally validated and may still contain significant errors;
- 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. Persons desiring to use the GOES-19 ABI Beta maturity Cloud Cover Layers product for any reason, including but not limited to scientific and technical investigations, are encouraged to consult the NOAA algorithm working group (AWG) scientists for feasibility of the planned applications. This product is sensitive to upstream processing, such as calibration and navigation.

The Cloud Team identified an issue with the Planck coefficients for GOES-19 used by the fast Planck routine within the GOES-R Ground System (GS). This issue affected the radiative transfer model (RTM) clear sky brightness temperatures as well as any fast Planck calls within various algorithms. The most

obvious effect was over-icing for the GOES-19 Cloud Phase output. This issue also impacted the CCL product since Cloud Phase is used as input. This issue was resolved on 23 October 2024 when updated Planck coefficients were installed in the GS. No other known issues in the CCL product are currently being investigated.

There are no known product issues under investigation at this time.

Contact for further information: OSPO User Services at SPSD.UserServices@noaa.gov

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