GOES-19 ABI L2+ Fractional Snow Cover
Beta Data Quality
October 23, 2024
Read-Me for Data Users

The GOES-19 Advanced Baseline Imager (ABI) L2+ Fractional Snow Cover (FSC) was declared Beta Maturity on October 1, 2024. No formal review was conducted because the algorithm used in the GOES-19 FSC retrieval is identical to the algorithms running with GOES-16, -17, and -18. Therefore, the Beta declaration of the ABI L1b and of the Cloud Mask product flows down to the ABI Level2+ products.

The ABI L2+ Fractional Snow Cover product assigns each earth-navigated pixel one of the following classifications: snow-free land surface, snow-covered land surface with the snow fraction ranging from 1 to 100%, fill value, and unavailable snow retrieval. The quality flag supplied with the product provides the reason for unavailable snow retrieval (water surface, clouds, rejected snow cover, insufficient daylight, etc.). The FSC algorithm uses ABI in bands 2, 3, 5, and 13. The Fractional Snow Cover product is generated for every ABI Full Disk (FD) of the Earth, Continental United States (CONUS) region, and the Mesoscale (MESO) regions at 2km nominal spatial resolution.

A full description and format of the Fractional Snow Cover 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 Enterprise algorithm used to derive the Fractional Snow Cover product from GOES-19 ABI observations is described in detail in the "Algorithm Theoretical Basis Document for Enterprise Fractional Snow Cover Map Product", available at https://www.star.nesdis.noaa.gov/goesr/documentation_ATBDs.php.

Beta maturity, by definition, means that:
- Initial calibration applied in L1b product;
- Rapid changes in product input tables, and possibly product algorithms, can be expected;
- Product quick looks and initial comparisons with ground truth data (if any) are 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.

Persons desiring to use the GOES-19 ABI Beta Maturity FSC products for any reason, including but not limited to scientific and technical investigations, are encouraged to consult the NOAA/NESDIS/STAR Algorithm Working Group (AWG) scientists for feasibility of the planned applications. Users bear all responsibility for inspecting the data prior to use and for the manner in which the data are utilized. The potential user should bear in mind that the FSC product is highly sensitive to the upstream data processing which includes the quality of calibration, navigation, and the cloud mask.

Known issues at the Beta Maturity stage include:

1. Occasional bands of missing data may be present in the product files.

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

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