Title:

Precipitation in CM SAF: recent GIRAFE operationalization, pre-operational anomaly service and future developments

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Main text:

The EUMETSAT Satellite Application Facility on Climate Monitoring (CM SAF) provides high-quality climate data records (CDRs) for Essential Climate Variables (ECVs) in the context of the global energy and water cycle. The Global Interpolated Rainfall Estimation version 1 (GIRAFE v1) is the first dedicated CDR by CM SAF for global precipitation. GIRAFE is derived from passive microwave observations of satellites in low Earth orbit and infrared imagery from geostationary platforms. GIRAFE offers a homogenised, stable precipitation monitoring product at 1° spatial resolution and daily and monthly temporal resolution, including an estimate of daily sampling uncertainty.

The operational GIRAFE v1 Interim CDR (ICDR) will be released in April 2026, extending the archive beyond the original CDR period with a latency of less than one month after the end of a month. While this extension preserves the quality and characteristics of the original CDR dataset, the recent decline and imminent discontinuation of the SSMIS services impacts the GIRAFE v1 output.

An initial investigation into climate normals and anomalies has been conducted in preparation for the inclusion of GIRAFE v1 in the EUMETSAT Climate Normals and Anomalies Service. Using the GIRAFE v1 CDR, preliminary monthly climate normals and corresponding anomaly fields (i.e., deviations from the normals) were generated. These products are evaluated for their ability to highlight systematic changes and extreme precipitation at monthly scale.

This presentation outlines the operationalization of GIRAFE v1, discusses the consequences of the SSMIS discontinuation on GIRAFE v1 precipitation monitoring, and presents first results of the pre-operational anomaly service. Finally, an outlook is provided on potential short-term improvements of GIRAFE (e.g., gap filling, latency reduction) and long-term developments for the ECV precipitation in CM SAF.