

Heading Toward Launch with the Integrated Multi-Satellite Retrievals for GPM (IMERG)

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The Day-1 algorithm for computing combined precipitation estimates in GPM is the Integrated Multi-satellitE Retrievals for GPM (IMERG). We plan for the period of record to encompass both the TRMM and GPM eras, and the coverage to extend to fully global as experience is gained in the difficult high-latitude environment. IMERG is being developed as a unified U.S. algorithm that takes advantage of strengths in the three groups that are contributing expertise:

- 1) the TRMM Multi-satellite Precipitation Analysis (TMPA), which addresses inter-satellite calibration of precipitation estimates and monthly scale combination of satellite and gauge analyses;
- 2) the CPC Morphing algorithm with Kalman Filtering (KF-CMORPH), which provides quality-weighted time interpolation of precipitation patterns following cloud motion; and
- 3) the Precipitation Estimation from Remotely Sensed Information using Artificial Neural Networks using a Cloud Classification System (PERSIANN-CCS), which provides a neural-network-based scheme for generating microwave-calibrated precipitation estimates from geosynchronous infrared brightness temperatures.

In this talk we summarize the major building blocks and important design issues driven by user needs and practical data issues. One concept being pioneered by the IMERG team is that the code system should produce estimates for the same time period but at different latencies to support the requirements of different groups of users. Another user requirement is that all these runs must be reprocessed as new IMERG versions are introduced.

IMERG's status at meeting time will be summarized, and the processing scenario in the transition from TRMM to GPM will be laid out. Initially, IMERG will be run with TRMM-based calibration, and then a conversion to a GPM-based calibration will be employed after the GPM sensor products are validated. A complete reprocessing will be computed, which will complete the transition from TMPA.