



Early Examples from the Integrated Multi-Satellite Retrievals for GPM (IMERG)

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The U.S. GPM Science Team's Day-1 algorithm for computing combined precipitation estimates as part of GPM is the Integrated Multi-satellitE Retrievals for GPM (IMERG). The goal is to compute the best time series of (nearly) global precipitation from "all" precipitation-relevant satellites and global surface precipitation gauge analyses. IMERG is being developed as a unified U.S. algorithm drawing on strengths in the three contributing groups, whose previous work includes:

- 1) the TRMM Multi-satellite Precipitation Analysis (TMPA);
- 2) the CPC Morphing algorithm with Kalman Filtering (K-CMORPH); and
- 3) the Precipitation Estimation from Remotely Sensed Information using Artificial Neural Networks using a Cloud Classification System (PERSIANN-CCS).

We review the IMERG design and development, plans for testing, and current status. Some of the lessons learned in running and reprocessing the previous data sets include the importance of quality-controlling input data sets, strategies for coping with transitions in the various input data sets, and practical approaches to retrospective analysis of multiple output products (namely the real- and post-real-time data streams). IMERG output will be illustrated using early test data, including the variety of supporting fields, such as the merged-microwave and infrared estimates, and the precipitation type. We end by considering the near-term and Day-2 issues that we expect to address.