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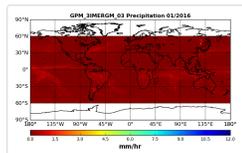


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Atmospheric Composition , Water and Energy Cycle , and Climate Variability Data

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GPM_3IMERGM: GPM L3 IMERG Final 1 month 0.1 degree x 0.1 degree precipitation V03



This is the GPM Level 3 IMERG Final Monthly 10 x 10 km V03 (GPM_3IMERGM). The Integrated Multi-satellite Retrievals for GPM (IMERG) is the unified U.S. algorithm that provides the Day-1 multi-satellite precipitation product for the U.S. GPM team.

The precipitation estimates from the various precipitation-relevant satellite passive microwave (PMW) sensors comprising the GPM constellation are computed using the 2014 version of the Goddard Profiling Algorithm (GPROF2014), then gridded, intercalibrated to the GPM Combined Instrument product, and combined into half-hourly 10x10 km fields.

These are provided to both the Climate Prediction Center (CPC) Morphing-Kalman Filter (CMORPH-KF) Lagrangian time interpolation scheme and the Precipitation Estimation from Remotely Sensed Information using Artificial Neural Networks Cloud Classification System (PERSIANN-CCS) re-calibration scheme. In parallel, CPC assembles the zenith-angle-corrected, intercalibrated "even-odd" geo- IR fields and forward them to PPS for use in the CMORPH-KF Lagrangian time interpolation scheme and the PERSIANN-CCS computation routines. The PERSIANN-CCS estimates are computed (supported by an asynchronous re-calibration cycle) and sent to the CMORPH-KF Lagrangian time interpolation scheme. The CMORPH-KF Lagrangian time interpolation (supported by an asynchronous KF weights updating cycle) uses the PMW and IR estimates to create half-hourly estimates.

The IMERG system is run twice in near-real time

"Early" multi-satellite product ~4 hr after observation time and

"Late" multi-satellite product ~12 hr after observation time,

and once after the monthly gauge analysis is received,

"Final", satellite-gauge product ~2 months after the observation month.

The baseline is for the (near)-real-time Early and Late half-hour estimates to be calibrated with climatological coefficients that vary by month and location, while in the Final post-real-time run the multi-satellite half-hour estimates are adjusted so that they sum to a monthly satellite-gauge combination. In all cases the output contains multiple fields that provide information on the input data, selected intermediate fields, and estimation quality.

In brief, the input precipitation estimates computed from the various satellite passive microwave sensors are intercalibrated to the GPM Combined Instrument product (because it is presumed to be the best snapshot GPM estimate), then "morphed" and combined with microwave precipitation-calibrated geo-IR fields, and adjusted with monthly surface precipitation gauge analysis data (where available) to provide half-hourly and monthly precipitation estimates on a 10-km grid over the domain 60 deg N-S. Precipitation phase is diagnosed using analyses of surface temperature, humidity, and pressure. The current period of record is mid-March 2014 to the present (delayed by about 2 months). ... Less

Data Access

Online Archive (<https://gpm1.gesdisc.ec>)

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Simple Subset Wizard (<https://disc.gsfc>)

Giovanni (<https://giovanni.gsfc.nasa.gov>)

Web Services ▾

Product Summary Data Citation Documentation

Shortname: GPM_3IMERGM
Longname: GPM L3 IMERG Final 1 month 0.1 degree x 0.1 degree precipitation V03
DOI: 10.5067/GPM/IMERG/MONTH/3B
Version: 03
Format: HDF-5
Spatial Coverage: (-90.0 to 90.0; -180.0 to 180.0)
Temporal Coverage: 2014-03-01 to Present
File Size: 30 MB
Data Resolution
Spatial: 0.1 degrees x 0.1 degrees

Temporal: 1 month