

Title: Upgrades and Early Results for IMERG V08

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The Integrated Multi-satellitE Retrievals for GPM (IMERG) product from the NASA–JAXA Global Precipitation Measurement (GPM) mission provides global satellite precipitation estimates for diverse scientific research and societal applications. An international constellation of low-Earth orbit and geosynchronous orbit satellites enables IMERG to achieve a high resolution of 0.1° every half-hour globally, with three Runs at different latencies to support varied research and application needs. The IMERG development team is working toward release of V08 in the summer 2026; this presentation gives a preview of key algorithm changes and some early results.

Some changes take advantage of advances in the input precipitation retrievals, including (i) the Goddard Profiling (GPROF) V08 product, which adopts a machine learning approach and demonstrates substantial improvement over the previous version; (ii) a new IR precipitation algorithm; and (iii) better representation of cold season precipitation to address prior underestimation. Other changes reflect lessons learned in Version 07, including (iv) a refined calibration procedure, especially across discontinuities such as the GPM orbit boost; (v) enhanced quality control of input precipitation estimates; and (vi) separate handling for different classes of passive microwave sensors in the merger process. The last item better accommodates varying levels of quality and prepares IMERG for the best use of smallsat sensors during Version 08. Collectively, these advances are expected to improve the skill of IMERG estimates. Early results bear this out, and in some cases might require re-examination of previous conclusions about the relative merits of various classes of sensors.