

EGU21-8468, updated on 09 Dec 2022

<https://doi.org/10.5194/egusphere-egu21-8468>

EGU General Assembly 2021

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



## The Global Precipitation Climatology Project Version 3 Products

**George J. Huffman**<sup>1</sup>, Ali Behrangi<sup>2</sup>, Robert F. Adler<sup>3</sup>, David T. Bolvin<sup>1,4</sup>, Eric J. Nelkin<sup>1,4</sup>, Yang Song<sup>2</sup>, and Jian-jian Wang<sup>3</sup>

<sup>1</sup>NASA Goddard Space Flight Center, MAPL, Greenbelt, Maryland, United States of America ([george.j.huffman@nasa.gov](mailto:george.j.huffman@nasa.gov))

<sup>2</sup>University of Arizona, Tucson, AZ, USA

<sup>3</sup>University of Maryland, College Park, MD, USA

<sup>4</sup>Science Systems and Applications, Inc., Lanham, MD, USA

The Global Precipitation Climatology Project (GPCP) is currently providing a next-generation Version 3.1 Monthly product, which covers the period 1983-2019. This modernized product includes higher spatial resolution (0.5°x0.5°); a wider coverage (60°N-S) by geosynchronous IR estimates, now based on the Precipitation Estimation from Remotely Sensed Information using Artificial Neural Networks-Climate Data Record (PERSIANN-CDR) algorithm, with monthly recalibration using Goddard Profiling (GPROF) algorithm retrievals from selected passive microwave sensors; and improved calibrations of Television-Infrared Operational Satellite (TIROS) Operational Vertical Sounder (TOVS) and Advanced Infrared Sounder (AIRS) precipitation, used outside 60°N-S. The merged satellite estimate is adjusted to the Tropical Combined Climatology (TCC) at lower latitudes, and the Merged CloudSat, TRMM, and GPM (MCTG) climatology at higher latitudes. Finally, V3.1 provides a merger of the satellite-only estimates with the Global Precipitation Climatology Centre (GPCC) monthly 1°x1° gauge analyses.

As well, the GPCP team is advancing a companion global Version 3 Daily product, in which the Integrated Multi-satellite Retrievals for Global Precipitation Measurement (GPM) mission (IMERG) Final Run V06 estimates are used where available (initially restricted to 60°N-S), and rescaled TOVS/AIRS data in high-latitude areas, all calibrated to the GPCP V3.1 Monthly estimate. Since IMERG currently extends back to June 2000, daily PERSIANN-CDR data will be used for the period January 1983–May 2000 to complete the record.

This presentation will provide early results for, and the latest status of, the Monthly and Daily GPCP products as a function of time and region. Key points include examining homogeneity over time and across time and space boundaries between input datasets. One key activity is to refine the V3 products while we continue to produce the Version 2 GPCP products for on-going use.