

Updated gridded datasets V.2022 provided by the Global Precipitation Climatology Centre (GPCC)

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Since its founding in 1989, the Global Precipitation Climatology Centre (GPCC) has been producing global precipitation analyses based on land surface in-situ measurements. In the more than 30 years since then the underlying database has been continuously expanded and includes a high station density and large temporal coverage. Due to the semi-automatic quality control routinely performed on the incoming station data, the GPCC database has a very high quality. GPCC data base holds data from about 124,000 stations, about three quarters of them having long time series.

The core of the analyses is formed by data from the national meteorological and hydrological services around the world, which provided their records to the GPCC, as well as global (like FAO, GHCN or CRU) and regional data collections as i.e. the Africa data set from S. Nicholson or the data set for the CIS of P. Groisman.

In addition, the GPCC receives SYNOP and CLIMAT reports via the WMO-GTS. These form a supplement for the high quality precipitation analyses and the basis for the near real-time evaluations.

Quality control activities include cross-referencing stations from different sources, flagging of data errors, and correcting temporally or spatially offset data. This data then forms the basis for the following interpolation and product generation.

In near real time, the 'First Guess Monthly', 'First Guess Daily', 'Monitoring Product', 'Provisional Daily Precipitation Analysis' and the 'GPCC Drought Index' are generated. These are based on WMO-GTS data and monthly data generated by the CPC (NOAA).

With a 2-3 year update cycle, the high quality data products are generated with intensive quality control and built on the entire GPCC data base. These non-real time products consist of the 'Precipitation Climatology', 'Full Data Monthly', 'Full Data Daily', and 'HOMPRA-Europe' and are now available in the V.2022 up to 2020.

All gridded datasets presented in this paper are freely available in netcdf format on the GPCC website <https://gpcc.dwd.de> and referenced by a digital object identifier (DOI). The site also provides an overview of all datasets, as well as a detailed description and further references for each dataset.

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