EMS Annual Meeting Abstracts
Vol. 11, EMS2014-130, 2014
14th EMS / 10th ECAC

Release of an improved Full Data Reanalysis and Climatology of the Global Precipitation Climatology Centre (GPCC)

Markus Ziese, Udo Schneider, Anja Meyer-Christoffer, Peter Finger, and Andreas Becker
German Weather Service, Hydrometeorology, Offenbach am Main, Germany (markus.ziese@dwd.de)

Since 1989, the Global Precipitation Climatology Centre (GPCC) collects world-wide observational in-situ data from rain gauges in order to provide gridded high-quality and high-resolution land surface precipitation analyses as mandated by WMO's World Climate Research Program and the Global Climate Observing System (GCOS).

Data collected from national meteorological and hydrological services (NMHS) are core of the GPCC data base, supported by global and regional data collections. Also the GPCC receives SYNOP and CLIMAT reports via WMO-GTS, which are mainly applied for near-real-time products. A high quality control effort is undertaken to remove miscoded and temporal or spatial dislocated data before interpolation.

The product suite of the GPCC contains near-real-time as well as non-real-time products. Near-real-time products are the 'First Guess Product' (daily and monthly) and 'Monitoring Product' (monthly), which are based on WMO-GTS data, e.g., SYNOP and CLIMAT reports and monthly totals calculated at CPC. Non-real-time products are the 'Full Data Reanalysis' and 'Climatology'. Data from national meteorological and hydrological services and regional and global data collections are mainly used to calculate these products. Also WMO-GTS data are used if no other data are available.

A new version of the Full Data Reanalysis and the Climatology was released. The old version was produced three years ago. In the meantime, about 10,000 additional stations were added to the data base of the GPCC. Furthermore, new data for the existing stations were collected and loaded into the data base. All in all, the new versions are based on about some 72,000 stations instead of roughly 67,200 stations of the old releases. Due to the additional stations and precipitation data, it was possible to detect errors not visible before. This improves the analysis essentially in Central Africa and South-East Asia. Along with the release of the Full Data Reanalysis and Climatology, an update of the Monitoring Product will also be produced. Then, the Monitoring Product is available back to 1982 including precipitation phases (liquid/mixed/solid) and a correction factor according to the systematic measurement errors.

Improvements of the analyses, underlying station distribution and examples of detected errors during the quality control will be shown.