

## **The Global Precipitation Climatology Centre of the Deutscher Wetterdienst serving the hydro-climatology community**

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Precipitation is a top listed parameter on the WMO GCOS list of 44 essential climate variables (ECVs). This is easily justified by its crucial role to sustain any form of life on earth as major source of fresh water, its major impact on weather, climate, climate change and related issues of society's adaption to the latter. Finally its occurrence is highly variable in space and time thus bearing the potential to trigger major flood and drought related disasters. It therefore didn't need the ECV badge in year 1989 to assemble enough arguments in support of the implementation of a Global Precipitation Climatology Centre at the Deutscher Wetterdienst with the ambition to provide for the most comprehensive and reliable global precipitation data set world wide. The effort was inaugurated as part of the Global Precipitation Climatology Project of the WMO World Climate Research Program (WCRP). Five prerequisites to reach and sustain the aspired service level have remained valid as follows: 1. An utmost care taken for the integrity and quality of the data 2. State-of-the-art methods applied for the data interpolation on regular grids 3. Derived products that are tailored to the manifold needs of the broad user community 4. An open ear to the community with regard to product and method enhancements 5. An efficient, successful and sustained data acquisition process supported by WMO

One of the most interesting GPCC products is surely the so-called Monitoring Product that is realized roughly two months after the fact based on the data gathered while listening to the GTS to fetch the SYNOP and CLIMAT messages. This product is highly welcome to the satellite based remote sensing community to provide for a gridded data set of highly reliable in-situ precipitation measurements to supplement their products and to calibrate their indirect precipitation measurements (Gruber and Levizzani, 2008, Chapter 2.2). Moreover GPCC has recently published its new 109 years Full Data Reanalysis covering years 1901-2009. The presentation will present some example application to illustrate the potential of the GPCC products. One example will also provide a first assessment of the strong 2010 La Nina season that has apparently caused severe weather patterns around the world, including the flood disasters in Pakistan and Wuhan, China. In doing so we will also demonstrate the capability of the GPCC visualizer , a user friendly web interface to the GPCC data base (available from [http://orias.dwd.de/GPCC/GPCC\\_Visualizer](http://orias.dwd.de/GPCC/GPCC_Visualizer)), for its potential to support such kind of global hydro-climatology assessments. The spatial distribution of the correlation between time series of ENSO and NAO indices with gridded precipitation of GPCC's analyses has been investigated for the period 1901-2010 for the Earth's land-surface . The correlation clearly shows coherent large-scale patterns indicating the significant effects of ENSO or NAO on the large-scale rainfall regimes. References Gruber, A. and V. Levizzani, 2008: Assessment of Global precipitation, A Project of the Global Energy and Water Cycle Experiment (GEWEX) Radiation Panel, GEWEX, World Climate Research Program, WMO, WCRP Report, May 2008, WCRP-128, WMO/TD-No. 1430; <http://www.wmo.int/pages/prog/wcrp/documents/AssessmentGlobalPrecipitationReport.pdf>