



Global daily precipitation analysis for the validation of medium-range climate predictions (DAPACLIP)

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The Federal Ministry of Education and Research in Germany funds the research programme “Mittelfristige Klimaprognosen” (MiKlip) with the aim to create a model system that can provide reliable forecasts on climate and weather, including extreme weather events. It is of central importance for the development process of the MiKlip system to validate the decadal prediction system based upon data and processes during the development stages. An essential part of the evaluation procedure will be the application of satellite derived datasets to assess the aspired model system with respect to atmospheric water cycle components including precipitation, clouds and related changes in the radiation budget.

Within the MiKlip DAPACLIP project new precipitation products suitable for the evaluation of the MiKlip prediction system were developed in close contact with the modelling community. These new datasets are used to evaluate precipitation from global and regional decadal MiKlip hindcasts on a daily time scale, including the statistical analysis of extreme precipitation events.

The DAPACLIP dataset covers the time period from 1988 to 2008. It is available in 1° and 2.5° resolution for global coverage as well as in 0.5° resolution for the European domain. The dataset consists of a combination of an in-situ based precipitation analysis of the Global Precipitation Climatology Centre (GPCC) and a new version of the satellite-derived Hamburg Ocean Atmospheric Parameters and fluxes from Satellite Data (HOAPS) precipitation analysis over ocean surfaces.

Verification results from comparisons between the DAPACLIP dataset and different precipitation products and datasets over land and ocean will be shown. Here, APHRODITE, PACRAIN and TRMM 3B42 daily have been used as verification datasets. Furthermore we provide first results from the evaluation of MiKlip Decadal Prediction System historical runs and hindcasts. The evaluation focuses on precipitation intensity and frequency, e.g. in terms of drought and wet spells as well as the statistical distribution of precipitation events.