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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 (BMBF) funds the research programme "Mittelfristige Klimaprognosen" (MiKlip) with the aim to create a model system that can provide reliable decadal forecasts on climate and weather, including extreme weather events. Of central importance for the development process of the MiKlip system is the data and process based validation of the decadal scale prediction system during the development stages of MiKlip. An essential part of the evaluation procedure will be the application of satellite derived data sets to assess the aspired model system with respect to atmospheric water cycle components including 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 are developed in close contact with the modelling community. These new data sets will be 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 data products will the time period from 1988-2008 and consists of daily data fields with several grid resolutions (1.0° x 1.0° and 2.5° x 2.5°; over Europe: 0.5°). The data set is based on an optimum combination of a dedicated in situ-based Global Precipitation Climatology Centre (GPCC) precipitation analyses for land surface areas and a new version of the satellite-derived Hamburg Ocean Atmosphere Parameters and fluxes from Satellite Data (HOAPS) precipitation analyses for ocean surface areas. An unprecedented feature in comparison to previous efforts is to allow for a traceable estimation of the uncertainty in the aspired data product. Over land the error information is retrieved from an optimized interpolation method that includes a kriging procedure. Over the ocean a 1D-Var retrieval is used to derive the precipitation along with a retrieval uncertainty from passive microwave data.

This presentation will show first results of the improved combined precipitation data set as well as the integration of this data in the model evaluation process.