Geophysical Research Abstracts
Vol. 19, EGU2017-13801, 2017
EGU General Assembly 2017

Continued development of a global precipitation dataset from satellite and ground-based gauges

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The project framework MiKlip ("Mittelfristige Klimaprognosen") is focused on the development of an operational forecast system for decadal climate predictions. The objective of the "Daily Precipitation Analysis for the validation of Global medium–range Climate predictions Operationalized" (DAPAGLOCO) project, is the development and operationalization of a global precipitation dataset for forecast validation of the MPI–ESM experiments used in MiKlip. The dataset is a combination of rain gauge measurement data over land and satellite–based precipitation retrievals over ocean.

Over land, gauge data from the Global Precipitation Climatology Centre (GPCC) at Deutscher Wetterdienst (DWD) are used. Over ocean, retrievals from the Hamburg Ocean Atmosphere Parameters and Fluxes from Satellite Data (HOAPS) dataset are used as data source. The currently available dataset consists of 21 years of data (1988–2008) and is provided in different spatial resolutions of 1° and 2.5° on the global scale, and 0.5° for Europe.

Rain rates over ocean are currently derived from satellite microwave imagers by using a neuronal network. For the future it is intended to switch this retrieval method to a 1D-Var method. The current state of the dataset is presented, an introduction to the future retrieval and its features is given and first results from evaluation and application are shown.