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A global ETCCDI based precipitation climatology from satellite and rain gauge measurements

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The project framework MiKlip ("Mittelfristige Klimaprognosen") is focused onto 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 has a spatial resolution of 1°.

So far, the MiKlip forecast validation is based upon the Expert Team on Climate Change and Detection Indices (ETCCDI). These indices focus on precipitation extrema in terms of spell durations, percentiles, averaged precipitation amounts and further more. The application of these indices on the DAPAGLOCO dataset in its current state delivers insight into the global distribution of precipitation characteristics and extreme events. The resulting global patterns of these characteristics and extrema are the main objective of the presentation.