



## **A new global precipitation dataset for climate monitoring based on rain-gauge and satellite observations**

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Precipitation is a central element in the global water and energy cycle. As a result of climate change, the global distribution of precipitation may change. To detect and study these changes, a temporally and spatially homogeneous precipitation data set is required.

Within the EURO4M EU-Project (European Reanalysis and Observations for Monitoring, [www.euro4m.eu](http://www.euro4m.eu)) a new, monthly, global precipitation dataset will be generated. This dataset will be based on a combination of GPCC (Global Precipitation Climatology Center, <http://gpcc.dwd.de>) data over land and HOAPS (Hamburg Ocean Atmosphere Parameters and Fluxes from Satellite Data, [www.hoaps.zmaw.de](http://www.hoaps.zmaw.de)) data over ice-free oceans. GPCC is based on rain-gauge measurements, whereas HOAPS is derived from satellite based microwave measurements of the SSM/I (Special Sensor Microwave/Imager) instruments. The new dataset will have a spatial resolution of  $0.5^\circ$  and cover the time period from July 1987 to 2005. Especially over oceans, the precipitation dataset will have an outstanding homogeneity due to the use of well calibrated SSM/I data. In the generation of the combined dataset, differences in measurement systems and data sampling, as well as regional dependent data uncertainties have to be considered. Due to the disturbance of the SSM/I-based precipitation algorithm by land surfaces, data gaps exist at coastal areas and around islands. These data gaps will either be filled by a statistical approach or with the help of auxiliary data.

Here we present first results of the combination of the two data sets. The new dataset is compared with other global precipitation datasets, e.g. GPCP and ERA-Interim.