



# Recent Developments and Releases of Precipitation Products from the German Weather Service and the EUMETSAT CM SAF

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# The HOAPS Satellite Climatology

The Hamburg Ocean Atmosphere Parameters and Fluxes from Satellite Data (HOAPS) set is a completely satellite based climatology of precipitation, evaporation and freshwater budget (evaporation minus precipitation) as well as related turbulent heat fluxes and atmospheric state variables over the global ice free oceans.

- 14 parameters: precipitation, evaporation and related surface and atmospheric parameters
- Data availability: 1987-2008
- Derived from radiometers on board polar orbiting satellites: SSM/I (passive microwave), AVHRR (IR, SST only)
  Homogeneous time exists multi-actuality and actual to the same exists.
- Homogeneous time series: multi satellite averages, containing all SSM/I operating at the same time, including inter-sensor calibration
- Available data products:
- Scan-based, pixel-level dataset (HOAPS-S)
- gridded (HOAPS-G, HOAPS-C) datasets, resolution 0.5°, monthly means and 6-hourly composites http://dx.doi.org/10.5676/EUM\_SAF\_CM/HOAPS/V001

#### Outlook

- Next release, Version 4.0, planned for 2016
- Implementation of 1D-Var retrieval with uncertainty estimate
- New (A)ATSR SST data set from ESA CCI
- Improved SSM/I FCDR and SSMIS integration with temporal coverage 1987-2014
- Error characterization of precipitation and evaporation currently investigated in DFG Research Unit 1740: Atlantic Freshwater Cycle

#### DAPACLIP

Daily precipitation data sets for the statistical evaluation and verification of hindcasts from the decadal prediction system MiKlip (funded by the BMBF).

- Combination of satellite derived (ocean) and gauge (land) data including error estimates.
- Evaluation of daily precipitation statistics from global and regional decadal hindcasts for verification purposes and the derivation of precipitation related ETCCDIs
   Consistent and the decadel needing in a precipitation probability to reproduce
- Characterization of the decadal prediction system regarding the capability to reproduce extreme precipitation events.



RX5day index: Maximum precipitation of five consecutive days within the period 1998-2008 from the DAPACLIP dataset

# SSM/I Fundamental Climate Data Record (FCDR)

The CM SAF (FCDR) of SSM/I brightness temperatures covers the time period from July 1987 to December 2008 including all available data from the six SSM/I radiometers aboard F08, F10, F11, F13, F14, and F15. It provides homogenized and inter-calibrated brightness temperatures in a user friendly data format. SSM/I data are used for a variety of applications, such as analyses of the hydrological cycle and related atmospheric and surface parameters, as well as remote sensing of sea ice. The homogenization and inter-calibration procedures ensure a long term stability of the FCDR for climate related applications.

## http://dx.doi.org/10.5676/EUM\_SAF\_CM/FCDR\_SSMI/V001

# Platform Stability









# **Global Precipiation Climatology Center (GPCC)**

### GPCC celebrates its 25th anniversary this year.

## Data Archive

GPCC data archive has grown to almost 100 000 stations, including more than 75 000 stations with data series of 10yrs minimum length, to be utilized for the background climatology product (release end of 2014).



The <u>GPCC First Guess Daily Product</u> has been released containing daily global land-surface precipitation based on the station database (SYNOP) available via GTS at the time of analysis (3 - 5 days after end of the analysis month). http://dx.doi.org/10.5676/DWD\_GPCC/FG\_D\_100

#### Universally Valid Drought Index



The Global Precipitation Climatology Centre Drought Index (GPCC\_DI; Ziese et al., 2014) is a combination of the DWD modified SPI (McKee et al., 1993, Pietzsch et al., 2011) and SPEI (Vicento-Serrano et al., 2009). The 'First Guess Product' is used as precipitation input data.

The potential evapotranspiration (PET) is calculated according to Thornthwaite (1948) utilizing the CPC Monthly Global Surface Air Temperature Data Set (Fan and van den Dool, 2008). Parameters to calculate SPI and SPEI were referenced to the 1961-1990 period.

http://dx.doi.org/10.5676/DWD\_GPCC/DI\_M\_100

## Outlook

- New monthly precipitation product (Full Data V7) currently under construction to be released end of 2014. Data set will feature substantial improvements in data coverage in particular across most sensitive areas in Mexico and Brazil. Temporal coverage will be at least 1901-2013. Extension to 1891 or 1881 is targeted, but depends on data availability and quality.
- HOMPRA data-set publication again delayed, GPCC is confident to issue a first version of HOMPRA in course of year 2015.