Forecast & Warning

Early warnings can help to reduce damage produced by extreme weather events. We provide ensemble short-term forecasts based on our corrected radar data and NWP forecasts and develop warning systems for:

- Precipitation and heavy rain, e.g. for emergency services
- Floods and the associated dangers
- Heavy rain forecasts for a citizen app

Climate studies & assessment

Findings about past and future climate development are becoming increasingly important. We use our knowledge about spatial and temporal relations to investigate regional impacts of climate change.

- Trend analyses for long-term series of measurements
- Expert opinion on water management disputes
- Statistical downscaling of precipitation data from climate models with the help of station and radar measurements
- Statistical analyses of climate model data

Training & expert advice

A technically sound use of precipitation data requires a fundamental understanding of precipitation, its formation and its measurement. We pass this knowledge on in:

- Further education and training in the field of water management and climate adaptation
- Workshops with external experts
- Special SCOUT software training with a focus on radar data quality and evaluation
- Advice on the floodlabel (www.floodlabel.com) by our certified staff
Analyses & detailed evaluation
We use quality-controlled and reliable data sets for a large number of applications, e.g.

- Extreme value statistics and comparative evaluation with KOSTRA
- Detailed analyses, studies and reports on heavy rain events and urban flash floods
- Complete solutions for storage, display and evaluation of current and past precipitation data e.g. with the HydroNET-SCOUT web portal

Display of current and past precipitation with the web portal HydroNET-SCOUT

SCOUT software
The SCOUT software developed by hydro & meteo GmbH enables the forecast, visualisation, processing and analysis of radar-measured precipitation

- Error correction, adjustment to station data, quality control
- Processing of time series for catchment areas
- Statistics and other evaluations
- Applications worldwide, various radar products supported
- Multiple display options with SCOUT View

Various correction options with our SCOUT software to correct frequent errors in radar measurements, such as clutter, beam blockage, attenuation and Bright Band. The filters can be individually adjusted for each radar

Data Processing & correction
Reliable data sets are an essential requirement for achieving high-quality results.

- Comprehensive quality inspection of radar and rain gauge data as well as water level gauge data and other hydrological and meteorological data
- Calculation of radar composites for various regions worldwide
- Computation of temporally and spatially high-resolution time series

Adjusted daily sum:
North German radar composite

Daily precipitation sum:
left original DWD data, right after SCOUT correction

3-stage radar data quality adjustment

- Fast - Q1
  adjusted with 3-hour sums available every 5 minutes
- Medium - Q2
  adjusted with daily sums available with a 24h delay
- Highest quality - Q3
  adjusted with daily sums available with a 24h delay

Data quality

Time delay