



## DATASET DESCRIPTION

### *Raster data set precipitation sums in mm for Germany - HYRAS-DE-PR v6-1*

**Version:** v6-1

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**Cite data set as:** Raster data set precipitation sums in mm for Germany - HYRAS-DE-PR v6-1, Version v6-1

**Dataset-ID:** urn:wmo:md:de-dwd-cdc:86b2dce6-8de1-4b1c-8fcb-e14f77c2397f

**Dataset-URL:** [https://opendata.dwd.de/climate\\_environment/CDC/grids\\_germany/monthly/hyras\\_de/precipitation/](https://opendata.dwd.de/climate_environment/CDC/grids_germany/monthly/hyras_de/precipitation/)

**Dataset-URL:** [https://opendata.dwd.de/climate\\_environment/CDC/grids\\_germany/multi\\_annual/hyras\\_de/precipitation/](https://opendata.dwd.de/climate_environment/CDC/grids_germany/multi_annual/hyras_de/precipitation/)

**Dataset-URL:** [https://opendata.dwd.de/climate\\_environment/CDC/grids\\_germany/daily/hyras\\_de/precipitation/](https://opendata.dwd.de/climate_environment/CDC/grids_germany/daily/hyras_de/precipitation/)

### ABSTRACT

These grids are a product derived from HYRAS-DE-PR. HYRAS-DE-PR is a precipitation product for Germany in a 1 km x 1 km grid for the period 1931 to the previous day and is based on daily measured values of precipitation height. The data set can be used, for example, for the analysis of past climate, for bias adjustment of regionalized climate projection data and as input data for hydrological modeling.

### POINT OF CONTACT

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### DATASET DESCRIPTION

<b>Parameter</b>	precipitation height
<b>Unit(s)</b>	mm
<b>Statistical processing</b>	monthly sum, multi-annual averages, daily sum
<b>Temporal coverage</b>	1931-01-01 -- ...
<b>Temporal resolution</b>	1 month, 30 years, 24 hours
<b>Spatial coverage</b>	Germany
<b>Spatial resolution</b>	1 km x 1 km
<b>Projection</b>	ETRS89 / LAEA Europe (EPSG:3035)
<b>Format description</b>	<a href="#">pr_hyras_*_v6-1_de_monsum.nc (monthly)</a> : The grids are written to a NetCDF file. The file of the current year is extended every day. The name of the NetCDF file is defined as follows: parameter_productname_resolution(in km) _year_version_region_monthlysums.nc (e.g. pr_hyras_1_2021_v6-0_de_monsum.nc)
<b>Format description</b>	<a href="#">pr_hyras_*_v6-1_de_*.nc (multi-annual)</a> : The grids are written to a NetCDF file. The file of the current year is extended every day. The name of the NetCDF file is defined as follows: parameter_productname_resolution(in km) _periode_version_region_timescale.nc (e.g. pr_hyras_1_1991_2020_v6-1_de_APR.nc)

## Format description

[pr\\_hyras \\* v6-1\\_de.nc \(daily\)](#) :

The grids are written to a NetCDF file. The file of the current year is extended every day. The name of the NetCDF file is defined as follows: parameter\_productname\_resolution(in km)\_year\_version\_region.nc (e.g. pr\_hyras\_1\_2021\_v6-1\_de.nc)

## DATA ORIGIN

The interpolation is based on the daily measured values of the precipitation height (6UTC - 6UTC of the following day). The daily updates measurements do not undergo a complete quality control. These measured values are initially only checked for threshold values and a simple grid control is performed. At the beginning and middle of each month, the previous month is recalculated and overwritten with quality-controlled measurements to ensure high quality of the raster data.

The method for regionalizing observed daily precipitation heights is essentially based on the interpolation of anomalies with respect to long-term mean values (background field). The monthly background fields are determined by a multiple linear regression, in which mean monthly station measurement from the period 1971-2000, longitude and latitude, height above sea level and direction and amount of exposure are used as input variables. The station measurements used to determine the background field undergo a quality control. To calculate the daily grids, anomalies are calculated from the station data and these are interpolated, distance weighted, to unoccupied grid centers using the four closest stations to the grid point.

## RESOURCE MAINTENANCE

The data is extended every day. It should be noted that at the beginning and middle of each month, the previous month is recalculated with quality-controlled measurements and the data of the current year is overwritten. To improve quality, station data from neighboring countries is also taken into account where available. This currently applies from 1951-2020.

The DWD reserves the right to update or provide a new version of the data set at its own discretion.

## VALIDATION AND UNCERTAINTY ESTIMATE

see Rauthe et al., 2013.

## UNCERTAINTIES

Uncertainties may result from the interpolation method used. Incorrect measurements also result in uncertainties in the grid field. For the interpolation of the grids, a different number of stations were used over time, as the measurement network has changed. This must be considered when comparing different years. Please also note the recommendations on uncertainties and interpretation of grid points of station-based grid data [https://opendata.dwd.de/climate\\_environment/CDC/help/Empfehlungen\\_Gitterdaten\\_DACH.pdf](https://opendata.dwd.de/climate_environment/CDC/help/Empfehlungen_Gitterdaten_DACH.pdf)

## LITERATURE

[Empfehlungen für Rasterdaten](#)

[Rauthe, M., Steiner, H., Riediger, U., Mazurkiewicz, A., Gratzki, A., 2013: A Central European precipitation climatology – Part I: Generation and validation of a high-resolution gridded daily data set \(HYRAS\) Meteorologische Zeitschrift Vol. 22 No. 3, p. 235 – 256, 2013](#)

## COPYRIGHT

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## REVISION HISTORY

This document is maintained by Deutscher Wetterdienst, Referat Hydrometeorologische Beratungsleistungen (KU41), last edited at 2025-07-08.