DATA SET DESCRIPTION

Recent hourly sliding RADOLAN grid of daily precipitation (binary)

Version 2.5

Cite data set as: DWD Climate Data Center (CDC): Recent hourly sliding RADOLAN grid of daily precipitation (binary), version

Dataset-ID: urn:x-wmo:md:de.dwd.cdc::gridsgermany-daily-radolan-recent-bin

INTENT OF THE DATASET

The routine procedure RADOLAN (Radar-Online-Aneichung) provides area-wide, spatially and temporally highly resolved quantitative precipitation data in real-time operation for Germany from the combination of the hourly values measured at the precipitation stations with the precipitation recording of the 17 weather radars.

POINT OF CONTACT

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DATA DESCRIPTION

Spatial coverage Germany

Temporal coverage 2020-01-01 until - today

Spatial resolution 1km x 1km

Temporal resolution 24 hours (sliding)

Projection Polar Steoreographic, Central Meridian 10.0° E , Standard Parallel 60.0° N

Format(s) The data are available as compressed files in the origin binary format, details at RADOLAN/RADVOR-Kompositformatbeschreibung (only in German).

Units precipitation height in 1/10 mm

Uncertainties A first validation of the data shows that the mean absolute error is about 1.05 mm/day against the measurements of conventional precipitation stations, details at Beitrag zur Europäischen Radarkonferenz 2010 in Sibiu.

DATA ORIGIN

Weather Radars can only measure the reflected signals from the hydrometeors in the atmosphere and not the precipitation directly. For the radarbased quantitative precipitation estimation the radar data are adjusted with the measurements oft he conventional precipitation stations. The adjusted radar data is a combination of the two sources of radar and surface stations and therefore these data are using the advantages of both data sets.

VALIDATION AND UNCERTAINTY ESTIMATE

Verification of the data from 2013 till 2016 against the daily measurements of the precipitation stations shows a mean median of the absolute daily deviations of 0.761 mm/day. This is quite better than the corresponding value of 2.390 mm/day for the non adjusted radar data.

ADDITIONAL INFORMATION

The data are not measured values, but represent a best estimate of precipitation due to the indirect method of radar measurement, which is calibrated (quantified) on the measured values of conventional stations (average station distance: approx. 20 km).

REFERENCES

Bartels, H. et al., 2004: Zusammenfassender Abschlussbericht zum Projekt RADOLAN

Winterrath T. et al., 2012: On the DWD quantitative precipitation analysis and nowcasting system for real-time application in German flood risk management. Weather Radar and Hydrology, IAHS Publ. 351

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REVISION HISTORY

This document is maintained by the Regional Precipitation Monitoring of the DWD, last edited at 2021-07-09.