Deutscher Wetterdienst
Wetter und Klima aus einer Hand

DATA SET DESCRIPTION

Recent hourly station observations of precipitation for Germany, quality control not completed yet

Version recent

Cite data set as: DWD Climate Data Center (CDC): Recent hourly station observations of precipitation for Germany, quality control not completed yet, version recent, last accessed: <date>.

INTENT OF THE DATASET

The "recent" data have not completed quality control yet. They are obtained from DWD stations and legally and qualitatively equivalent partner stations operated for climatological and climate related applications. Comprehensive station metadata (station relocation, instrument change, time zones, change of algorithms) are included.

POINT OF CONTACT

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DATA DESCRIPTION

Spatial coverage   stations in Germany

Temporal coverage   rolling: 500 days before yesterday - until yesterday

Temporal resolution   hourly

Format(s)   The station observations (produkt_*.txt) are zipped together with the station metadata. The latter are given in *.txt as well as *.html. The file Metadaten_Parameter* contains a listing of the parameters measured at the station (the parameter portfolio) with begin, end, units, measurement procedures, averaging formulas, measurement times and applied time units which are all related to the station Id and the station name valid now. The instrument history is sorted according to the parameters (see file Metadaten_Geraete*). There, the history of sensor height, type of instrument and measurement procedure is given, together with the historical station names. The station ID is unique and does not change over time. For a convenient documentation of station name change, see Metadaten_Stationsname*. The geographical metadata of the station (longitude, latitude, height) is listed in Metadaten_Geographie*.txt together with the Stations_id and the current station name. All these information is combined into a single zip-file for each station: *_[Stations_id]_akt.zip.
An overview over all stations with start and end dates is given in the station list: Stationsliste. Note that for convenience, the list comprises not only stations given here, but also stations with more complicated copyright regulations which may be obtained for certain applications, requiring discussion with the point of contact.

Parameters   The file produkt*.txt comprises following parameters:

STATIONS_ID	station identification number	
MESS_DATUM	measurement time	yyyymmddhh
QN_8	quality level of next columns	coding see paragraph "Quality information"
R1	hourly precipitation height	mm
RS_IND	index	

	0	no precipitation
	1	precipitation has fallen
WRTR	form of precipitation	WR-code
eor	end of record	can be ignored

Missing values are marked as -999. All dates given in this directory are in UTC. The hourly precipitation heights are calculated from the six 10min measurement intervals of the preceding hour (e.g., for UTC11 the sum of precipitation UTC10-UTC11 is given). The WRTR form of precipitation is only given at certain times, in accordance with SYNOP definition. Refer to daily values for more information on precipitation type. The classification of precipitation type in the daily values differs from the classification for the hourly values. For the hourly values, the W_R definition (see Table 55, VUB 2 Band D, 2013) is used: 0- no fallen precipitation or too little deposition (e.g., dew or frost) to form a precipitation height larger than 0.0, for automatic stations this corresponds to WMO code 10 ; 1 - precipitation height only due to deposition (dew or frost) or if it cannot decided how large the part from deposition is; 2 - precipitation height only due to liquid deposition; 3 -precipitation height only due to solid precipitation; 6 - precipitation height due to fallen liquid precipitation, may also include deposition of any kind, or automatic stations this corresponds to WMO code 11; 7 - precipitation height due to fallen solid precipitation, may also include deposition of any kind, for automatic stations this corresponds to WMO code 12; 8 - fallen precipitation in liquid and solid form, for automatic stations this corresponds to WMO code 13; 9 - no precipitation measurement, form of precipitation cannot be determined, for automatic stations this corresponds to WMO code 15.

Uncertainties

The stations are nowadays selected and operated according to WMO guidelines. Though these guidelines aim at minimizing possible local effects, still some applications of certain parameters may require the consideration of local and regional effects.

Quality information

The quality levels "Qualitätsniveau" (QN) given here apply for the respective following columns. The values are the minima of the QN of the respective daily values. QN denotes the method of quality control, with which erroneous values are identified and apply for the whole set of parameters at a certain time. For the individual parameters there exist quality bytes in the internal DWD data base, which are not published here. Values identifed as wrong are not published. Various methods of quality control (at different levels) are employed to decide which value is identified as wrong. In the past, different procedures have been employed. The quality procedures are coded as following:
quality level (column header: QN_)
1- only formal control during decoding and import
2- controlled with individually defined criteria
3- ROUTINE control with QUALIMET and QCSY
5- historic, subjective procedures
7- ROUTINE control, not yet corrected
8- quality control outside ROUTINE
9- ROUTINE control, not all parameters corrected
10- ROUTINE control finished, respective corrections
finished

DATA ORIGIN

This climate data are from the station network of DWD, operationally collected in the central MIRAKEL data base and archived, see Behrendt et al., 2011, and Kaspar et al., 2013. For details on current measurement and observation procedures see VuB 3 Beobachterhandbuch (DWD, 2014a), VuB 3 Technikerhandbuch (DWD, 2014b) and VuB 2 Wetterschlüsselhandbuch (DWD, 2013).

VALIDATION AND UNCERTAINTY ESTIMATE

The quality control (see Spengler, 2002) of this data is not completed yet. Various levels of quality control (see Kaspar et al., 2013) are in progress.

CONSIDERATIONS FOR APPLICATIONS

For any data analysis, the metadata available in the *.zip files should be taken into account.

ADDITIONAL INFORMATION

For extending the time series into the past, see subdirectories ../historical/. When data from both directories "historical" and "recent" are used together, the difference in the quality control procedure should be considered. For the long term stability consider the uncertainties explained in the data set descriptions within subdirectories /historical/.

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REFERENCES

Behrendt, J., et al.: Beschreibung der Datenbasis des NKDZ. Version 3.5, Offenbach, 15.02.2011.

DWD Vorschriften und Betriebsunterlagen Nr. 3 (VuB 3), Beobachterhandbuch (BHB) für Wettermeldestellen des synoptisch-klimatologischen Mess- und Beobachtungsnetzes, März 2014a .

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Kaspar, F., et al.: Monitoring of climate change in Germany – data, products and services of Germany`s National Climate Data Centre. Adv. Sci. Res., 10, doi:10.5194/asr-10-99-2013, 99–106, 2013.

Spengler, R.: The new Quality Control- and Monitoring System of the Deutscher Wetterdienst. Proceedings of the WMO Technical Conference on Meteorological and Environmental Instruments and Methods of Observation, Bratislava, 2002.

COPYRIGHT

The instructions in ftp://ftp-cdc.dwd.de/pub/CDC/Terms_of_use.pdf should be followed. The DWD website provides comprehensive copyright information.

REVISION HISTORY

The data in this directory are updated daily. This document is maintained by the National Climate Data Centre (NKDZ) of DWD, last edited 18.12.2018.