DATA SET DESCRIPTION

Hourly station observations of form of precipitation (WR code) for Germany

Version v19.3 & recent

Cite data set as: DWD Climate Data Center (CDC): Hourly station observations of form of precipitation (WR code) for Germany, version v19.3, last accessed: <date>.

INTENT OF THE DATASET

This data are from DWD stations operated for climatological and climate related applications (partner stations not included).

POINT OF CONTACT

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DATA DESCRIPTION

Spatial coverage Germany

Temporal coverage 2001-04-01 until - yesterday

Temporal resolution hourly

Format(s) WR-Code of the precipitation form:

_____
0 => no precipitation has fallen and / or no precipitation from settled precipitation
1 => Precipitation height exclusively from settled precipitation (solid and liquid), or if it can not be clearly determined whether only solid or only liquid precipitate has settled.
2 => Precipitation height exclusively from settled precipitation.
3 => Precipitation height exclusively from solid settled precipitation
6 => fallen precipitate only in liquid form
7 => fallen precipitate only in solid form
8 => fallen precipitate in liquid and solid form
9 => precipitation measurement failed / precipitation form can not be determined
10 => no precipitation, automatic measurement
11 => liquid precipitation, automatic measurement
12 => solid precipitation, automatic measurement
13 => liquid and solid precipitation, automatic measurement
14 => Form of falling precipitation can not be clearly determined and settled Precipitation, automatic measurement
15 => missing value, form of precipitation not detectable, automatic measurement
_____

Units			
	GEOM	The Spatial Data Object (SDO)	String (OGC WKT)
	STATION_ID	ID of the Spatial Data Object (SDO) as defined by the DWD, e.g. Stations_ID	String
	STATION_NAME	Spatial Data Object (SDO) name as defined by DWD	String

ZEITSTEMPEL	Reference datetime of the value (!= measuring time), usually the starting time of the reference interval.	Datetime (YYYY-MM-DD hh: mi: ss)
ZEITINTERVALL	Length of Reference Interval	String (ISO_8601#TimeSpan)
WERT	Hourly station observations of form of precipitation (WR code, see section Format)	Number (numerical code)
EINHEIT	unit in which the values are present	String
QUALITAET_BYTE	QUALITAET_BYTE (QB) indicates whether the value has been objected to and / or corrected (see Quality).	Number
QUALITAET_NIVEAU	QUALITAET_NIVEAU (QN) describes the process of quality control and refers to a complete set of parameters at a specific date. (see quality).	Number

Quality information

The QUALITAETS_BYTE (QB) denotes whether the value was objected to and/or corrected.

Explanation for QB:

QB=0 denotes not flagged,
QB=1 had no objections (either checked and not objected, or not checked and not objected, this can be interpreted only when considering QN);
QB=2 corrected;
QB=3 confirmed with objection rejected;
QB=4 added or calculated;
QB=5 objected;
QB=6 only formally checked;
QB=7 formal objection;
QB=-999 quality flag does not exist.

The QUALITAETS_NIVEAU (QN) shows the quality control procedure applied for a data report (of several parameters) for a certain reporting time.

Explanation for QN:

QN=1 only formal control;
QN=2 controlled with individually defined criteria;
QN=3 automatic control and correction;
QN=5 historic, subjective procedures;
QN=7 second control done, before correction;
QN=8 quality control outside ROUTINE;
QN=9 not all parameters corrected;
QN=10 quality control finished, all corrections finished.

Data before and including 1980 can reach as best quality check level QN=5. Data after 1980 can reach QN=10 as best quality check level.

DATA ORIGIN

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.

These climate data are from the station networks of Deutschen Wetterdienst which are regularly updated with recent data, and with recovered historical data. From 1997 onwards, the data are 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). Note that when going back to historical times, guidelines on observation procedure, instruments and observation times were issued by the authority in charge (see, e.g., Freydank, 2014), and might be incompletely recorded in the metadata.
As explained in Kaspar et al., 2013 in the early years numerous meteorological agencies were active in the area of todays Germany. After establishment of the International Meteorological Organization (IMO) in 1873, the various standards were gradually harmonized, resulting in a single standard 1936. After 1945, the standards in East and West Germany developed differently, and were harmonized again after re-unification in 1990. Between the end of the nineties and 2009 many stations were changed from manual to automated.

VALIDATION AND UNCERTAINTY ESTIMATE

REFERENCES

DWD Vorschriften und Betriebsunterlagen Nr. 2 (VuB 2), Wetterschlüsselhandbuch Band D, Nov 2013.

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

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.

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and Methods of Observation, Bratislava, 2002.

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REVISION HISTORY

This document is maintained by the Climate Data Centre of the DWD, last edited at 2019-09-30.