



DATASET DESCRIPTION

Recent daily station observations of soil temperature station data for Germany, quality control not completed yet

Version: v23.3

Publication date: 2023

Cite data set as: Recent daily station observations of soil temperature station data for Germany, quality control not completed yet, Version v23.3

Dataset-ID: urn:x-wmo:md:de.dwd.cdc::obsgermany-climate-daily-soil_temperature-recent

Dataset-URL: https://opendata.dwd.de/climate_environment/CDC/observations_germany/climate/daily/soil_temperature/recent/

ABSTRACT

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.

The data are versioned up to and including the previous year, see date of issue.
For more recent data the quality control has not yet been completed.

POINT OF CONTACT

Deutscher Wetterdienst
CDC - Vertrieb Klima und Umwelt
Frankfurter Straße 135
63067 Offenbach
Tel: + 49 (0) 69 8062-4400
Fax: + 49 (0) 69 8062-4499
E-Mail: klima.vertrieb@dwd.de

DATASET DESCRIPTION

Parameter	soil temperature
Unit(s)	°C
Statistical processing	time series
Temporal coverage	now-P500D -- ...
Spatial coverage	stations in Germany
Projection	WGS 84 (EPSG:4326)
Format description	A zip archive is provided for each station. This zip archive contains the data and meta-informations of the station, instruments and algorithms. The naming schema of the zip-archives is: tageswerte_{product_code}_{station_id}_akt.zip

application schema	<p>csv dialect description</p> <table border="0"> <tr> <td>delimiter</td> <td>line terminator</td> <td>header</td> <td>quote char</td> </tr> <tr> <td>;</td> <td>\\r\\n</td> <td>true</td> <td>"</td> </tr> </table> <p>csv content description</p> <table border="0"> <thead> <tr> <th>column name</th> <th>description</th> <th>uom</th> <th>type</th> <th>format</th> </tr> </thead> <tbody> <tr> <td>STATIONS_ID</td> <td>DWD Station ID</td> <td></td> <td>VARCHAR2</td> <td></td> </tr> <tr> <td>MESS_DATUM</td> <td>reference date for the measurement</td> <td></td> <td>NUMBER</td> <td>YYYYMMDD</td> </tr> <tr> <td>QN_2</td> <td>the code of the quality level reflects the quality control procedure applied for the data</td> <td></td> <td>VARCHAR2</td> <td>numerical code</td> </tr> <tr> <td>V_TE002M</td> <td>daily soil temperature in 2 cm depth</td> <td>°C</td> <td>NUMBER</td> <td>9990.0</td> </tr> <tr> <td>V_TE005M</td> <td>daily soil temperature in 5 cm depth</td> <td>°C</td> <td>NUMBER</td> <td>9990.0</td> </tr> <tr> <td>V_TE010M</td> <td>daily soil temperature in 10 cm depth</td> <td>°C</td> <td>NUMBER</td> <td>9990.0</td> </tr> <tr> <td>V_TE020M</td> <td>daily soil temperature in 2 cm depth</td> <td>°C</td> <td>NUMBER</td> <td>9990.0</td> </tr> <tr> <td>V_TE050M</td> <td>daily soil temperature in 50 cm depth</td> <td>°C</td> <td>NUMBER</td> <td>9990.0</td> </tr> </tbody> </table>	delimiter	line terminator	header	quote char	;	\\r\\n	true	"	column name	description	uom	type	format	STATIONS_ID	DWD Station ID		VARCHAR2		MESS_DATUM	reference date for the measurement		NUMBER	YYYYMMDD	QN_2	the code of the quality level reflects the quality control procedure applied for the data		VARCHAR2	numerical code	V_TE002M	daily soil temperature in 2 cm depth	°C	NUMBER	9990.0	V_TE005M	daily soil temperature in 5 cm depth	°C	NUMBER	9990.0	V_TE010M	daily soil temperature in 10 cm depth	°C	NUMBER	9990.0	V_TE020M	daily soil temperature in 2 cm depth	°C	NUMBER	9990.0	V_TE050M	daily soil temperature in 50 cm depth	°C	NUMBER	9990.0
delimiter	line terminator	header	quote char																																																			
;	\\r\\n	true	"																																																			
column name	description	uom	type	format																																																		
STATIONS_ID	DWD Station ID		VARCHAR2																																																			
MESS_DATUM	reference date for the measurement		NUMBER	YYYYMMDD																																																		
QN_2	the code of the quality level reflects the quality control procedure applied for the data		VARCHAR2	numerical code																																																		
V_TE002M	daily soil temperature in 2 cm depth	°C	NUMBER	9990.0																																																		
V_TE005M	daily soil temperature in 5 cm depth	°C	NUMBER	9990.0																																																		
V_TE010M	daily soil temperature in 10 cm depth	°C	NUMBER	9990.0																																																		
V_TE020M	daily soil temperature in 2 cm depth	°C	NUMBER	9990.0																																																		
V_TE050M	daily soil temperature in 50 cm depth	°C	NUMBER	9990.0																																																		
Quality Information	<p>The QUALITAETS_NIVEAU (QN) shows the quality control procedure applied for a data report (of several parameters) for a certain reporting time.</p> <p>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.</p> <p>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.</p> <p>The QUALITAETS_BYTE (QB) denotes whether the value was objected to and/or corrected.</p> <p>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.</p>																																																					

DATA ORIGIN

The data are taken from the station measuring networks of Deutscher Wetterdienst as well as its predecessor organisations. The dataset is regularly updated with recent as well as with recovered historical data. From 1997 onwards, the data have been imported operationally into the central specialist database and archived, see Behrendt et al., 2011, and Kaspar et al., 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 today's Germany. After establishment of the der 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.

RESOURCE MAINTENANCE

In the directory recent/ the data files are updated daily. On a rolling basis, the data of the last 500 days - up to yesterday - are exchanged.

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.

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.

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/.

LITERATURE

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.

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

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

DWD Vorschriften und Betriebsunterlagen Nr. 3 (VuB 3), Technikerhandbuch (THB) für Wettermeldestellen des synoptisch-klimatologischen Mess- und Beobachtungsnetzes, März 2014b.

COPYRIGHT

The Ordinance to Determine the Conditions for Use for the Provision of Spatial Data of the Federation ("Verordnung zur Festlegung der Nutzungsbestimmungen für die Bereitstellung von Geodaten des Bundes" - GeoNutZV) shall apply, for details turn to "http://www.geodatenzentrum.de/docpdf/geonutzv_eng.pdf" and "http://www.dwd.de/EN/service/copyright/copyright_artikel.html".

REVISION HISTORY

This document is maintained by Deutscher Wetterdienst, CDC - Betrieb, last edited at 2023-06-06.