

DATA SET DESCRIPTION

Recent hourly wind speed and direction, observed at urban stations for selected urban areas in Germany

Version recent

Cite data set as: DWD Climate Data Center (CDC): Recent hourly wind speed and direction, observed at urban stations for selected urban areas in Germany, version recent, recent date.

INTENT OF THE DATASET

This document describes the freely available urban climate data from the DWD Climate Data Center (CDC). The measurements are performed in cities for comparison with the rural areas and for evaluating the climatological effect of urban development. These data are not compliant to the usual World Meteorological Organisation (WMO) standards for climate data because of their urban positioning, but they follow the guidance of WMO "Instruments and Observing Methods Report No.81: Initial guidance to obtain representative meteorological observations at urban sites" (Oke, 2006). Station metadata are included. The data have not yet passed the full quality control.

POINT OF CONTACT

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DATA DESCRIPTION

| | |
|----------------------------|--|
| Spatial coverage | Germany |
| Temporal coverage | 20.08.2015 - yesterday |
| Format(s) | The station observations (produkt*.txt) and the station metadata (Stationsdaten*.xlsx) are zipped together into one zip-file (stundenwerte*.zip) |
| Parameters | Hourly wind speed and wind direction is given as the average of the six 10min intervals measured in the previous hour (e.g., at UTC 11, the average windspeed and average wind direction during UTC10-UTC11 is given). The measurements are done at Berlin's television tower. The file produkt*.txt comprises: STATIONS_ID station identification number MESS_DATUM yyyyymmdd QUALITAETS_NIVEAU see below STRUKTUR_VERSION identification of the monitoring network WINDGESCHWINDIGKEIT mean windspeed at 368m m/sec WINDRICHTUNG mean wind direction at 368m degree with missing values are marked as -999. |
| Uncertainties | Uncertainties in urban areas are dominated by local influences. |
| Quality information | QUALITAETS_NIVEAU describes the method of quality control, with which erroneous or suspicious values are identified and set to -999. QUALITAETS_NIVEAU 1- only formal control |

2- controlled with individually defined criteria

DATA ORIGIN

These data are not compliant to the usual World Meteorological Organisation (WMO) standards for climate data because of their urban positioning, but they follow the guidance of WMO "Instruments and Observing Methods Report No.81: Initial guidance to obtain representative meteorological observations at urban sites" (Oke, 2006). The location of the urban climate stations was chosen according to the following criteria: (1) inner city location, no suburbia, (2) the point of measurement has to be typical for the respective district or quarter, (3) preferably in central location within a continuous building development, (4) no transition areas between quarters of varying characteristics, (5) surface area of the station should be representative of the surrounding environment (sealings, grass, gravel, etc.) (6) point of measurements should be chosen half of the typical local distance between houses, but not less than 5m distance to the next house. (7) location is not in parks and not below trees.

VALIDATION AND UNCERTAINTY ESTIMATE

The data quality control is not completed yet.

CONSIDERATIONS FOR APPLICATIONS

The Deutsche Wetterdienst recommends that users of urban climate data always consider the limited representativity and quality of the data in their usage and further analysis, and communication to third parties. Weather records for Germany are not determined from the station data located in urban surroundings given here, but instead from WMO compliant climate stations (located outside cities).

ADDITIONAL INFORMATION

Climate stations (non-urban) are provided in the directory https://opendata.dwd.de/climate_environment/CDC/observations_germany/climate/.

REFERENCES

Oke, T.R., Initial guidance to obtain representative meteorological observations at urban sites, WMO Instruments and observing methods report No. 81, WMO TD Nr. 1250, 2006.

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REVISION HISTORY

This document is maintained by Klima und Umweltberatung, KU11 (DWD), last edited on 19.12.2018.