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Deutscher Wetterdienst
Wetter und Klima aus einer Hand

DATA SET DESCRIPTION

Multi-annual grids of annual sunshine duration over Germany 1981-2010

Version v1.0

Cite data set as: DWD Climate Data Center (CDC): Multi-annual grids of annual sunshine duration over Germany 1981-2010, version v1.0, 2018.

INTENT OF THE DATASET

The grids are derived from DWD stations and legally and qualitatively equivalent partner stations in Germany run for climatological and climate related applications.

POINT OF CONTACT

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DATA DESCRIPTION

Spatial coverage	Germany
Temporal coverage	01.01.1981 - 31.12.2010
Spatial resolution	1 km x 1 km
Temporal resolution	30 years, for each calendar month and season, and for the whole year
Projection	3-degree Gauss-Kruger zone 3, Ellipsoid Bessel, Datum Potsdam (central point Rauenberg), EPSG:31467, see http://spatialreference.org/ref/epsg/31467/. o define the spatial projection in GIS, the file https://opendata.dwd.de/climate_environment/CDC/help/gk3.prj can be used. Help is given on importing into ESRI ArcGIS in https://opendata.dwd.de/climate_environment/CDC/help/Hilfe_Gauss-Krueger-Raster2GIS.pdf.
Format(s)	There are files for each calendar month (*01.asc.gz bis *12.asc.gz), for each season, i.e., spring (March, April, May): *13.asc.gz, summer (June, July, August): *14.asc.gz, autumn (September, October, November): *15.asc.gz, winter (December, January, February): *16.asc.gz, and for the whole year (*17.asc.gz). the winter value contains the December of the previous year. The file in ESRI-ascii-grid-format has in the header the coordinates for the lower left grid cell, including the definition of its center [XLLCENTER],[YLLCENTER] or its corner [XLLCORNER],[YLLCORNER]. It contains a table of 654 x 866 numbers. Each row goes from West to East. The first row is the northernmost one (654 values with 4 digits). Missing values are marked with -999.
Parameters	Multi-annual mean of sunshine duration in h
Uncertainties	Uncertainties are caused by the interpolation method, and erroneous or missing observations. When comparing grid fields for different periods, it should be considered that the measurement network has changed over time.

DATA ORIGIN

The multi-annual means for the calendar months are averages of the respective 30 monthly grids. For the seasonal values (spring-13, summer-14, autumn-15, winter-16) and for the whole year (-17) the respective monthly grids were summed up.

VALIDATION AND UNCERTAINTY ESTIMATE

The given resolution of 1 km x 1 km is the resolution of the employed digital height model. The gridded data miss processes relevant for local climate which are not covered by observations of the station network or cannot be reproduced by the gridding method explained above. The actual information density depends on the station network.

REFERENCES

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Müller-Westermeier, G., Walter, A., Dittmann, E.: Klimaatlas Bundesrepublik Deutschland, Teil 1-4, Selbstverlag des Deutschen Wetterdienstes, Offenbach am Main, 2005.

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REVISION HISTORY

This document is maintained by DWD division National Climate Monitoring, last edited 18.12.2018.