DATA SET DESCRIPTION

Monthly grids of the accumulated actual evapotranspiration over grass and sandy loam

Version 0.x

Cite data set as: DWD Climate Data Center (CDC): Monthly grids of the accumulated actual evapotranspiration over grass and sandy loam, version 0.x, current date.

INTENT OF THE DATASET

The grid is interpolated from actual evapotranspiration over grass which was derived at a fixed selection of stations. Only locations with complete data sets from 1.1.1991 till now have been used. The actual evaporation over grass is calculated with the model AMBAV, which was developed at the agrometeorological research centre in Braunschweig. The interpolation method is a regional multiple linear regression with geographical longitude, latitude and height of location as input variables and a subsequent triangulation, covering Germany with a resolution of 1x1 km.

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 8062-3987
Mail: klima.vertrieb@dwd.de

DATA DESCRIPTION

Spatial coverage	grids over Germany
Temporal coverage	01.01.2010 - end of penultimate month
Spatial resolution	1 x 1 km
Temporal resolution	monthly
Projection	Gauss Krüger 3. meridian strip. The PRJ-file can be downloaded here: ftp://ftp-cdc.dwd.de/pub/CDC/help/gk3.prj.
Format(s)	The grids are in ascii format. The first six rows describe the grid definition, including the upper left corner, spatial resolution und amount of rows and columns. Grid points outside Germany are marked as missing numbers. The grid can be read with ArcGis.
Parameters	Values in the grid must be divided by 10 to get correct unit of mm.
Uncertainties	The grids contain uncertainties concerning calculation and also from interpolation. From nearly 280 locations 360000 grid points were interpolated. As the actual evapotranspiration can vary strongly with soil moisture and soil type, the interpolation results may be realistic but not exact.
Quality information	without quality flags

DATA ORIGIN

The calculations at the locations were made by the agrometeorological model AMBAV. The interpolation was made in two steps. The calculations were made for grass over sandy loam. Dividing Germany in 20 different regions by overlapping circles and making a multiple linear regression with all locations in each circle. Regression coefficients are the height, the longitude and latitude of the location. The calculated regression coefficients of the four surrounding circles for a given location were weighted in dependence from the distance to circle centres. In a last step the differences between calculated values and the interpolated values at the calculation locations are distributed by a triangulation into the grid.

VALIDATION AND UNCERTAINTY ESTIMATE

The resulting grids depend strongly on the used interpolation. Plausibility tests showed very good performance.

REFERENCES

Braden, H., 1995: The model AMBETI. - A detailed description of a soil-plant-atmosphere model, Berichte des Deutschen Wetterdienstes, Nr. 195.

COPYRIGHT

REVISION HISTORY

This document is maintained by DWD unit KU31, last edited on 19.12.2018.