DATA SET DESCRIPTION

Content of data set: homogenized climate data series interpolated to grid points

Name of data set files:

gridpoints_coordinates.txt
it contains the indeces and coordinates of the grid points

<parameter>_grid_<period>.txt
<parameter>: name of the meteorological parameter
<period>: year of the start and end of the data series

DATA SET CHARACTERISTICS

Spatial coverage: Hungary

Temporal coverage: 1970 - previous year or 1997 - previous year

Temporal resolution: 6 hours in UTC

Data formats:

gridpoints_coordinates.txt:
txt, matrix layout
1. row: header
2-1234. column: index, longitude, latitude
<parameter>_grid_<period>.txt:
txt, matrix layout, 1 column contains 1 grid point in the following format:
1. row: indeces of grid points defined in the gridpoints_coordinates.txt file (1, …, 1233)
i. row: gridded data series (i>1)
1. column: year
2. column: month
3. column: day
3+j. column: data series (j=1, …, 1233)

Parameters:

period	abbrev.	parameter	unit	number of used stations
1970-2021	t00	temperature at 00:00	°C	58
	t06	temperature at 06:00	°C	58
	t12	temperature at 12:00	°C	58
	t18	temperature at 18:00	°C	58
1997-2021	r06	precipitation between 00:01-06:00	mm	89
	r12	precipitation between 06:01-12:00	mm	89
	r18	precipitation between 12:01-18:00	mm	89
	r24	precipitation between 18:01-24:00	mm	89

Uncertainties:

In the case of gridding with MISH v1.03 software, the most important model statistics are generated for each grid point.

Data quality information:

The quality of the grid database depends on the number, time length, and quality of the homogenized data sets used for modeling, as well as the interpolation method itself. MISH is a software specifically developed for interpolating meteorological elements based on adequate mathematical formulas.

DATA ORIGIN, METHODOLOGY

The grid point data series are derived from the data of the Hungarian Meteorological Service measuring stations. The data series were quality controlled, homogenized and completed by the MASH homogenization method first, and then the resulting quality controlled data series without gaps and free of inhomogeneities were interpolated by the MISH interpolation method.

VALIDATION AND UNCERTAINTY ESTIMATE

The evaluation and testing of the results is possible by cross validation on the basis of the interpolation errors or the representativity values for stations, which are generated automatically during the interpolation with MISH.

CONSIDERATIONS/SUGGESTIONS FOR APPLICATIONS

The gridded data sets are suitable, among other things, for deriving climate averages and other climatic characteristics, such as various climate indices, for monitoring temporal climate change for the whole territory of Hungary. However, please note that the extreme values measured at meteorological stations are not necessarily found in the data series, as the grid points do not coincide with the location of the stations. On the other hand extremes can also occur during interpolation.

ADDITIONAL INFORMATION

According to the plans, the data series will be updated with the data of the previous year by March 31 of each year. In addition, the range and number of stations taken into account in the calculations may change, and thus the interpolated values may vary.

POINT OF CONTACT

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