DATA SET DESCRIPTION

Name of the data set: HuClim data set

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

Name of the 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: from 1971 or 2001 to previous year

Temporal resolution: daily

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
1971-1974	tx	maximum temperature	°C	55
	tn	minimum temperature	°C	55
	t	mean temperature	°C	55
1971-1998	u	relative humidity	%	60
1975-	tx	maximum temperature	°C	112
	tn	minimum temperature	°C	112
	t	mean temperature	°C	112
	r	precipitation	mm	500
	p	surface air pressure	hPa	22
1999-	u	relative humidity	%	107
2001-	f	mean wind speed	m/s	89
	fx	maximal wind gust	m/s	89
	sr	global radiation	MJ/m^2	37

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

odp@met.hu