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Comparison of various homogenization and interpolation approaches: CARPATCLIM project and CZGRID results

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In the Czech Republic, experience with data quality control, homogenization and interpolation exists for many years, and it has also been applied in other countries. For the data processing, the software packages AnClim (Štěpánek, 2010a), LoadData and ProClimDB (Štěpánek, 2010b) were created (read more at www.climahom.eu). They offer complex solution, from tools for handling databases, through data quality control to homogenization of time series, as well as time series analyses, extreme value evaluation and model output verification. As the final output, the „technical“ series of various meteorological elements were created, which means that data are quality controlled, homogenized and with filled gaps. These series were calculated for the locations of existing climatological and precipitation stations of the Czech Hydrometeorological Institute's station network in the period 1961-2010. Another result are series interpolated into a regular grid network of 10×10 km (CZGRID)
CARPATCLIM project is a consortium of ten organizations founded for a tender published by Joint Research Centre. The objective of the project is to investigate the detailed temporal and spatial structure of the climate of Carpathian Region using unified methods. The Czech Republic cover west part of Carpathian Region. Daily values of more than ten meteorological variables are calculated on a 0.1° spatial resolution grid for the period 1961-2010. For quality control, homogenization and filling missing values MASH software was used (Tamas Szentimrey, Hungary) and for gridding homogenization data MISH software from same author was used.
In our study we present comparison of homogenization and interpolation results performed by our own approach and those produced by the CARPATCLIM project in the Czech area of the Carpathian Region.