



Comparison of correction methods for inhomogeneities in daily time series on example of Central European datasets

P. Stepanek, P. and Zahradnicek

Czech Hydrometeorological Institute, Meteorology and Climatology, Brno, Czech Republic (petr.stepanek@chmi.cz, +420-541421019)

Prior any data analysis, data quality control and homogenization have to be undertaken to get rid of erroneous values in time series. In this work we focused especially on comparison of methods for daily data inhomogeneities correction. Two basic approaches for inhomogeneity adjustments were adopted and compared: (i) “delta” method – adjustment of monthly series and projection of estimated smoothed monthly adjustments into annual variation of daily adjustments and (ii) “variable” correction of daily values according to the corresponding percentiles. “Variable” correction methods emerged only in recent years. Their results were investigated in this work more deeply and they were mutually compared. Among the analyzed methods belong HOM of Paul Della-Marta, SPLIDHOM method of Olivier Mestre and own methods (DAP). We applied multi-element approach (using e.g. weather types) as well and investigated if it can improve the models. Comparison of the available correction methods is also current task of the ongoing COST action ESO601 (www.homogenisation.org).

Performance of the available correction methods (on daily scale) is shown on example of Central European series of various meteorological elements (air temperature, precipitation, relative humidity, sunshine duration). Comparisons among the methods as well as its various modifications (parameters settings) were investigated. For the task, ProClimDB software has been used (read more at www.climahom.eu).