



Software for quality control and homogenization of climatological time series (AnClim and ProClimDB)

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During the last decade, a software package consisting of AnClim, ProClimDB and LoadData for processing climatological data has been created. This software offers a complex solution for processing climatological time series, starting from loading the data from a central database (e.g. Oracle, software LoadData), through data quality control and homogenization to time series analysis, extreme value evaluations and model output verification (ProClimDB and AnClim software). The detection of inhomogeneities is carried out on a monthly scale through the application of AnClim, while quality control, the preparation of reference series and the correction of found breaks is carried out by the ProClimDB software. The software combines many statistical tests, types of reference series (calculated from distances or correlations) and time scales (monthly, seasonal and annual). These can be used to create an "ensemble" of solutions, which may be more reliable than any single method (if the detection results coincide). In recent years, tools for the correction of inhomogeneities in daily data were introduced. Methods already programmed in R (e.g. by Christine Gruber, ZAMG), such as HOM of Paul Della-Marta and the SPLIDHOM method of Olivier Mestre or our own methods, are available, some of which are able to apply a multi-element approach (using e.g. weather types). Available methods can easily be compared and evaluated (both for inhomogeneity detection or correction, in this case). The comparison of the available correction methods is also the current task of ongoing COST action ESO601 (www.homogenisation.org). Further methods, if available under R, can easily be linked with the software, whereby the entire processing benefits from the user-friendly environment in which all the most commonly used functions for data handling and climatological processing are available (read more at www.climahom.eu).