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A blind test of correction algorithms for daily inhomogeneities

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As part of the COST Action HOME (Advances in homogenisation methods of climate series: an integrated approach), a dataset was generated that serves as a validation tool for correction of daily inhomogeneities. The dataset contains daily air temperature data and was generated based on the temperature series from the Czech Republic.
The validation dataset has three different types of series: network, pair and pair-dedicated data. Different types of inhomogeneities have been inserted into the series. Parametric breaks in the first three moments were introduced and the influence of relocation was simulated by exchanging the distribution of two nearby stations.
The participants have returned several contributions, including methods that are currently used: HOM, SPLIDHOM (with various modifications like HOMAD and bootstrapped SPLIDHOM), QM (RHtestsV3 software), DAP (ProClimDB), HCL (Climatol), MASH and also simple delta method. The quality of the homogenised data was measured by a large range of metrics, the most important ones are the RMSE and the trends in the moments. Thanks to RHtestsV3 algorithms we could also assess relative and absolute homogenization results. As expected, the simpler methods, correcting only the mean, are best at reducing the RMSE.

For more information on the COST Action on homogenisation see:
http://www.homogenisation.org/