



Homogenisation of the longest meteorological data series in Latvia: temperature and precipitation records from Riga

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The University of Latvia in Riga City stores the longest air temperature and precipitation data series for territory of Latvia. Temperature have been observed since 1795 and precipitation since 1851. The both long-term climatological temperature and precipitation records are significantly affected by a number of non-climatological factors (station moves, changes in instrumentation; introduction of different observing practices like a different observing time or introduction of wetting corrections for precipitation, changes in the local urban environment). If these non-homogeneities are not accounted for properly, that makes the data unrepresentative to be used for long-term analyses of climate variations and changes.

Several steps have been done in homogenisation of the long-term temperature and precipitation data series from Riga: a) archives of daily data are digitised; b) the earlier data are recalculated to standard measurement unites; c) the missing values are filled by extrapolation from nearest observation stations; d) correction to adjust differences in time of daily observations are developed and applied to the daily temperature records; e) the adjustments for instrumental changes and wetting correction are applied to the precipitation records; f) two homogeneity tests are applied to the annual, seasonal and monthly series to investigate the future non-homogeneities in the time series; g) the data are corrected for a other non-homogeneities.

The adjustments in the monthly temperature are up to $\pm 1^{\circ}\text{C}$ and monthly precipitation adjustments can be up to +50%, with largest values in spring and summer.

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