



Homogenization of time series from Portugal and its former colonies

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The contribution will present different approaches of homogenization techniques applied to the long-term monthly series of various meteorological variables (e.g. air temperature, precipitation, pressure, etc.) from Portugal, its autonomous regions (Madeira, Azores) and former colonies (Guinea-Bissau, Mozambique, Angola, Macao, Cape Verde, São Tomé and Nova Goa - India). The work is motivated by the ERA-CLIM project activities aiming at the improvement of the available observational record for the early 20th century.

Due to the sparse network of the weather stations with long time series in Portugal and its former territories, absolute and relative homogeneity tests will be employed. Overall, for mainland Portugal, long time (centennial) series from Lisbon, Porto and Coimbra stations are the only ones available. For certain variables (i.e. precipitation) Beja and Guarda's stations can also be used. For the 1915-1946 period, using monthly data, the density of the weather stations in Africa is generally satisfactory. However, taking advantage of the probabilistic approach to the homogeneity test performance, absolute and relative techniques will be applied in other weather stations as well. The main goals of the contribution can be summarized as follows: (i) to apply different homogenization software packages on the time series, (ii) to assess the suitability of various types of statistical tests on the local data and to compare the results with metadata (if possible) and (iii) to provide a list of non-climatic shifts to support a new global atmospheric reanalysis within the ERA-CLIM project.