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Homogenising daily temperatures series over southern and eastern Mediterranean locations: an exploratory assessment of the results

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Ancient observations of daily maximum (Tx) and minimum (Tn) temperatures series over southern and eastern Mediterranean locations have been recovered, digitised and quality controlled under the EU-funded EUropean Reanalysis and Observations for Monitoring (EURO4M) project, linked to the World Meteorological Organization (WMO) MEditerranean DAta REscue (MEDARE) Initiative. These old records have been merged with their recent and available series accessed from different sources, in order to extend them back in time and subject them to homogenisation processes. A total of 38 daily Tx and Tn time-series for various locations in the southern and eastern parts of the Mediterranean Basin have been adjusted at the monthly scale following two homogenisation approaches: the HomeR (http://www.homogenisation.org/v_02_15/index.php?option=com_content&view=article&id=93:homer&catid=1:general&Itemid=1)and ACMANT (http://www.c3.urv.cat/data.html) methods and their monthly factors interpolated into the daily scale following two approaches.

This contribution is aimed at, therefore, providing relevant information on the merging procedures and requirements for the application of both homogenisation methods and their averaged results, including details on the number of breakpoints detected and validated by both methodological approaches, their causes, the frequency distribution of the applied monthly correction factors and the schemes for interpolating the monthly factors into the daily scale. In addition, an assessment on the impact of the adjustments on the area-averaged trends estimated for western and eastern parts of southern Mediterranean will be provided by means of a comparison exercise between the raw and adjusted series.