



Impact of Copernicus Quality Control procedure on ECA&D

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ECA&D data-set collects over 4800 temperature series from all countries of Europe and Mediterranean countries. Large number of these series are affected by outliers, repeated values and other mistakes in the measurements. These quality issues, coupled with the inhomogeneities due to relocations or changes of the instruments, may lead to erroneous estimates of climate impact indices and trends. In the context of Copernicus project C3S.311a.Lot.4, KNMI has taken part in the selection and the development of a QC procedure.

In collaboration with GCRI and OMSZ five different quality check methods (ProClimDB, MASH, ACMANT, NOAA, C3QC) have been tested on four benchmark data-sets covered by ECA&D (Emilia-Romagna, Southern Sweden, Bavaria and Slovenia). These have been generated running preliminarily a Quality Check procedure and introducing fictitious outliers, repeated values and duplicate sequences. These benchmark data-sets reflect a real world. Further methods comparisons have been performed on a surrogate data-set coming from International Surface Temperature Initiative.

The selected procedure (MetQC) has been applied to the whole ECA&D using a spatial moving window, with grid boxes of 3x3 degrees. In this work we present analysis of the found errors with regard to their temporal and spatial distribution and their nature.

This QC method will be made operational and applied each month on the recurrent updates. QC results, thanks to a flag code, will be shared with users and ECA&D partners, providing original and cleaned-up data-sets.