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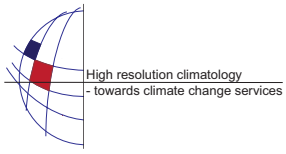

Advances in the homogenization of daily climate surface data in Switzerland

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It is often the extremes of weather and climate which have the greatest impact on society. In this respect temporal high-resolution and long-term climate data series are a unique source for e.g. variability and trend analyses, extreme value analysis or analyses of extreme climate indices. Consequentially that these analyses require high demands on the data quality for accurate conclusions on climate change. This can be achieved by homogenization of the corresponding data. It is the intention of MeteoSwiss to fulfill these requirements for their available long-term climate surface data in Switzerland by i) systematically preserve historical climate data in respect to national and international guidelines, ii) ensure efficient and extensive quality control and iii) homogenize long-term data series of the most important climate variables on monthly and daily time scales.

In the framework of the COST Action ES0601 “Advances in homogenization methods of climate series: an integrated approach (HOME)”, which dedicates a main focus on the comparison and development of daily homogenization methods, we present results of the comparison from different daily homogenization procedures using long-term series. Currently only a few statistical methods exist to help homogenize daily climate data. We will focus on three different daily homogenization methods and will present results of extreme temperature values during the period 1864 until 2009 for several Swiss surface stations. One aspect will be the exposure of the three methods to different weather conditions such as sunny calm days or days influenced by the foehn in spring. It is important to see how the methods deal with physical impacts (radiation, wind).