Metadata in homogenization of Slovenian climatological data

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Abstract

Process of homogenization of Slovenian climatological data was largely supported by metadata. Breaks in time series of mean air temperature were explained by metadata in 88%. We found out that the most common explanation of breaks is relocation of meteorological station; the other explanations of breaks are: changes or calibrations of thermometers, new or repainted Stevenson screen and new observer.

But at the beginning of homogenization process the metadata was scattered in different locations and sources; most of it was still in paper format only. Therefore first step was to detect all possible sources of metadata. Because of very time consuming work, we focused on meteorological stations used in homogenization; metadata for these stations was digitized in the first place. The period of homogenization process is 1961–2011 therefore digitalization of metadata was focused also in this period. Collected and digitized was data about: location or relocation of meteorological station, Stevenson screen, instruments and their calibrations or their changes and observers.

For 354 meteorological stations all known metadata for period 1961–2011 was collected and digitized, even more: for most of them all known metadata for period since 1925 on is gathered. We scanned all sketches, photographs and maps of meteorological station, we digitize (typewrite) all texts considering station (lists of observers, remarks, descriptions, calibration or relocation dates etc). For most of the 354 meteorological stations the paper archive of metadata was completed and formed simple digital one.