



Evaluation and trends of daily homogenized precipitation in Sweden

Erik Engström, Stina Karlsson, and Christophe Sturm

Swedish Meteorological and Hydrological Institute, Climate Information and Statistics, Norrköping, Sweden
(erik.engstrom@smhi.se)

Observational data are important when climate change and variability are studied. It is therefore very important that the calculated trends only depend on changes in the climate. Phenomena that are not related to climate can affect the observations. Non-related phenomena can, for example, be a relocation of a measurement station, change of measurement method, urbanization or change of vegetation. The correction process of these inhomogeneities is called homogenization. The purpose of homogenization is that time series of climate variables will only depend on the climate and its variability.

The present study focuses on an evaluation of daily homogenized precipitation data in Sweden. Daily precipitation data have been studied during the time period 1961-1990, and the total precipitation has been investigated. 35 measurement stations in Sweden were chosen in the beginning of the study and can eventually be extended further backwards in time. The program that was used in this study is called Climatol and is an R-package developed to homogenize climate variables. Climatol focuses on homogenization of daily data. The program also fills in missing values in given time series as a step in the homogenization process. A sensitivity study for critical parameters in Climatol has been performed. Critical parameters are for instance SNHT, allowed distance to reference stations and outlier tolerance. The aim of the study was to compare unhomogenized data with homogenized data, assess trends in the Swedish precipitation climate and to investigate the sensitivity of the Climatol method. The results from this study will be presented at the EMS conference.