



Development of a new historical daily precipitation time series for Uccle

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Precipitation is one of the essential climate variables identified for the Global Climate Observing System. This is due to its crucial role as major source of fresh water in sustaining all forms of life on Earth, and its major impact on weather, climate, climate change and related issues of society's adaptation to the latter. The occurrence of precipitation is highly variable in space and time, thus bearing the potential to trigger major flood and drought-related disasters. High-quality homogeneous long-term precipitation time series are key information to help contextualizing recent climate change, identifying emerging trends, serving the ground-truth based reference for climate models validation and understand impacts on sectors such as agriculture, water resources and flood management. Since the begin of the measurements in April 1886, numerous manual rain gauges have been in use in the climatological park of the Royal Meteorological Institute of Belgium (RMI) in Uccle, Brussels. However, the existing pluviometric records were until recently largely under-exploited because easily accessible digital values were mostly restricted to only few rain gauges. Thanks to recent digitization efforts undergone at RMI daily precipitation amounts recorded in all rain gauges that have been in use in the site are now available in a digital form. All these parallel observations were considered to produce a quality controlled and homogenized daily precipitation series. Note that the centennial time series of 10-min precipitation amounts from the pluviograph installed in the Uccle climatological park was also taken into account. The new historical reference pluviometric time series for Uccle is presented in this contribution. The various rain gauges are described and parallel measurements analyzed. Comparison with the automated rain gauge measurements is also provided