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Quality control and homogenization of wind speed time series using observations from Hungary

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The existence of long and reliable instrumental climate records is necessary both to assess climate variability and climate change and to validate climate model outputs. Analysis of appropriate and good quality datasets may help to mitigate possible negative effects of climate change. Furthermore, besides temperature and precipitation, wind is also a key meteorological element, therefore it is essential to study average and extreme characteristics and tendencies of present and future wind climate.

Long term observations involve inhomogeneities due to change of measuring methods, sensors, surroundings of stations or moving into a new location. Therefore homogenization is necessary in order to make reliable analysis of datasets. In this study the MASH (Multiple Analysis of Series for Homogenization) procedure developed at the Hungarian Meteorological Service was applied to improve our wind time series. Daily wind datasets were homogenized at 19 Hungarian synoptic stations in the period from 1975 to 2012. This paper discusses the validation of the homogenization process and presents the quality control results.