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Regional tendencies of mean and extreme wind characteristics over Hungary

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As a consequence of anthropogenic climate change, extreme climatic events may change their frequency and intensity in the near future. It is therefore of great interest to document the extremes of surface wind that could assist in estimating the regional effects of climate change. Hungary had not been the subject of extensive wind climate studies in the last century. In response to the need for a new statistical analysis a research started on clarifying the possible changes of wind characteristics in the country. The research presented is based on 34-year-long (1975-2008) wind data set of 36 Hungarian synoptic meteorological stations. As a preliminary study, basic analysis of wind climate was carried out, spatial and temporal distributions of mean and extreme wind characteristics were estimated. The main results suggest that regional mean and extreme wind speed values decreased over Hungary during the last quarter of the 20th century, especially during the last decade. Furthermore, measured and reanalysis data were compared in order to prove the adaptability of contemporary climate simulation results in estimation of regional climate change effects.