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Extreme temperature events during the spring and autumn seasons in the Czech Republic

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Today a great attention is turned to extreme weather events. The changes in characteristics of minimum and maximum air temperature are usually studied with focus on warm and cold parts of the year. However, strong extreme events in spring and autumn have recently been recorded in the Czech Republic (e.g. cold March 2013). In addition, according to new climate change scenarios for the Czech Republic the expected increase of air temperature in transitional seasons is comparable or higher than in summer and winter seasons. Therefore, in present contribution we focus on extreme air temperature events in spring and autumn seasons in the Czech Republic. Besides the seasonal extremes determined from station data, which usually occur at the beginning and by the end of spring (autumn) due to the annual course of air temperature, the standardized data with removed annual course are used as well. The extreme air temperature events are detected using the Weather Extremity Index (WEI) combining return periods and the extent of affected area. The generalized extreme value (GEV) parameters are used to estimate return periods of daily observations. Characteristics of individual extreme events (duration, areal extent, localization, distribution of intensity) are studied. Further, the temporal evolution of frequency of occurrence during the period of 1961-2010 is analyzed. The work has been supported by the grant P209/11/1990 funded by the Czech Science Foundation.