



Are the extreme cold events in the Czech Republic milder and less frequent and abnormally warm events in increase?

Lenka Crhová, Eva Holtanová, Anna Valeriánová, and Martin Stříž

Czech Hydrometeorological Institute, Climatology, Prague, Czech Republic (lenka.crhova@chmi.cz)

Recent climate change involves not only changes in temperature mean, but the variability and extremes of air temperature are affected as well. Less frequent and milder cold events are expected in changing climate. Two warmest winters in the period 1961-2010 occurred in the Czech Republic in the last 10 year (winter seasons 2006/2007 and 2013/2014). Moreover, during these two seasons many local records of maximum air temperature were exceeded. Therefore, in present contribution we focus on extremely cold and abnormally warm air temperature events in winter season in the Czech Republic. Besides the daily minimum air temperature for cold event detection, the standardized data of daily maximum air temperature with removed annual cycle are used for abnormally warm events detection. The extremely cold and abnormally warm air temperature events are assessed using the Weather Extremity Index (WEI), which evaluates the extremity (return period) and spatial extent of the meteorological extreme event of interest. The generalized extreme value (GEV) distribution is used to estimate return periods of daily observations. The temporal evolution of frequency of occurrence and changes in events characteristics during the period of 1961-2010 are analysed. The work has been supported by the grant P209/11/1990 funded by the Czech Science Foundation.