



Climatology of extreme precipitation events in the Czech Republic in the period 1961-2010.

Anna Valeriánová (1), Lenka Crhová (1), Eva Holtanová (1), Miloslav Müller (2), Marek Kašpar (2), and Martin Stříž (1)

(1) Czech Hydrometeorological Institute, Climatology, Prague, Czech Republic (anna.valerianova@chmi.cz), (2) Institute of Atmospheric Physics ASCR, Prague, Czech Republic

During the last 20 years 41 floods were recorded in the territory of Czech Republic. These events included floods of both types, i.e. winter floods joined with meltwater and precipitation and summer floods caused by extreme precipitation. The mean annual precipitation amount in the period 1991-2010 is about 5 % higher than the value for the period 1961-1990 and some changes were found in the annual course of precipitation. In present contribution we focus on days with extreme precipitation in the Czech Republic in the period of 1961-2010. Taking into account the fact that extreme precipitation usually occurred in the Czech Republic during the summer half year, we used the standardized data of precipitation amount with removed annual cycle. Non-zero precipitation amounts for each station and each calendar day were standardized by time-smooth mean and time-smoothed skewness by transformation formulas. The generalized extreme value (GEV) distribution was applied for evaluation of return periods of 1 to 5-day standardized precipitation amount. The parameters of the GEV distribution were estimated by means of the L-moment algorithm and the region-of-influence method. The temporal evolution of frequency of occurrence and changes in characteristics of extreme precipitation events 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.