

Abstract

The purpose of my thesis is to evaluate the extremity of selected precipitation events on territory of the Czech Republic in 1890, 1896, 1897, 1899, 1902 and 1903. I used documented floods to identify specific precipitation events in this period. Individual events were examined by means of the WEI index (weather extremity index) and the frequency of measured precipitation amounts. The most extreme examined event occurred from 27 July to 31 July 1897. Its extremity was also determined by the affected area, which was almost the size of the entire Czech Republic. A very high value of 149 was calculated for the period from 1 September to 4 September 1890. For the events of September 1899, May 1896 and July 1903, the resulting value of WEI was close to the value of 80. The least extreme examined event occurred in June 1902 within a very small affected area (8,630 square kilometres). The recorded value was 25.3 WEI. When comparing the examined events and cases in the years 1961 - 2010 in terms of value of the WEI, I found that the years 1897 (first) and 1890 (fifth) are among the most extreme five years. For comparison, values of the WEI from July 1997, July 1981 and August 2002 were converted into a network of stations that applied to the surveyed years. The results proved the applicability of the WEI index for calculating the extremity of historical events with a lower number of stations where precipitation amounts are measured.

Key words: flood, WEI index, Czech Republic, precipitation, extremity