



Spatio-temporal analysis of the annual maximum multi-day precipitation amounts in Croatia

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Meteorological data base for design and maintenance of hydro-technical systems mostly contains estimates of 1-day and/or 5-day maximum expected precipitation amounts that may have hazardous impact on individual objects. However, multi-daily rainy periods with large amount of precipitation are usually caused by intense rainy episodes lasting up to three days. Hence, in this study, maximum annual multi-day precipitation amounts for 1-, 2-, 3- and 5-days have been analyzed. The study comprises 137 meteorological stations in Croatia from the 1961-2010 period. Spatial distribution of the average maximum precipitation values is presented. Expected maxima for different return periods (2, 5, 10, 25, 50 and 100 years) have been estimated by the generalized extreme value distribution (GEV), presenting the parameters important for hydro-technical system design. The results of this study will serve as a basis for the regionalization of extreme precipitation amounts for the purpose of preparation of hazard and flood risk maps in Croatia.