Analyses of time variabilities of runoff coefficients at two neighbouring karst catchments

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Runoff coefficient represents the ratio between total runoff and total precipitation. This coefficient is the basic hydrological parameter that describes the water budget and the reaction of hydrological system to rainfall events, so the analyses of its change over different time periods inside a catchment can provide general information about hydrological processes on the catchment which is important for water management. Numerous mainly empirical approaches have been used for runoff coefficient estimation. This work presents the results of analyses of runoff coefficients obtained for two neighbouring karst catchments using hourly rainfall and spring discharge data. In order to obtain the best results, two well-known but differently approached hydrograph separation methods were applied: S-L method and constant k-method. These two procedures give acceptable and physically based values of runoff coefficients. Runoff coefficients are calculated as average values on monthly, seasonal and annual basis. Rainfall events with obviously large magnitude and long duration were extracted from the available set of data and separately analysed in order to obtain the event-based values of runoff coefficients. The subject of interest of this work is the time variability of values of runoff coefficients at different time scales. The obtained values of runoff coefficients for two neighbouring catchments are compared, analysed and discussed.