



The evaluation of storm rainfall variability and its influence on runoff response at a catchment scale

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Storm rainfall events are usually very dynamic processes which are characterized by high spatial and temporal variability. It can influence the catchment response to the event a lot in terms of the shape and volume of response hydrographs. In this contribution, the variability of selected rainfall events is presented. It is assessed in terms of total volumes of precipitation which are an input to rainfall-runoff process.

As a source of precipitation information, data from precipitation gauging stations were used which have one hour time step. Additionally, data originated from weather radar were used to describe spatial variability in more detail. Measured reflectivity data were transformed into the values of precipitation intensities which were compared to station data to make a check on the reliability of radar originated data. The assessment was carried out by the comparison of total precipitation to a catchment based on different extent of source data. Precipitation totals were calculated from station data using different methods including Thiessen polygons and different interpolation techniques.

As a study area, the catchment of Blanice River was selected. This catchment is located in Central Bohemia Region and smaller part extends beyond it to South Bohemia Region. Its total area to the confluence to Sázava River is 543 km². In this catchment, agricultural lands predominates but the percentage of forests is also not negligible. The area is in general hilly with important presence of steep slopes.

The results of obtained by the analyses carried out show the high importance of the amount of available precipitation data and their quality. Despite the fact that the variability of precipitation can affect the distribution of runoff and consecutively the shape of response hydrograph, it can affect also the accuracy and representativeness of the information provided by point measurements of precipitation by gauges and by weather radars.

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