



## **Quantification of precipitation intensity variations during heavy rains**

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Since precipitation can be distributed very unequally during heavy rains, the hydrological response can be significantly influenced not only by the precipitation amount but also by the spatial and temporal distribution of the rainfall. The latter one seems to be more important in case of very small catchments. Therefore, not only design precipitation totals but also knowledge on intensity variations during the precipitation episodes is needed to design the runoff. The suggested methodology is based on the analysis of the maximum precipitation intensities in step-by-step shortened time windows. Individual episodes are labeled by a series of parameters representing the precipitation concentration and intensity increase or decrease.

The methodology was applied to adjusted radar-derived precipitation estimates from the Czech Republic 2002-2011. We present results from selected pixels with different topography. The application proved significant differences in precipitation intensity course between lowlands and mountains but also among episodes of various durations.