



Simulation of catastrophic Floods caused by extreme scenario Rainfall

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August 2002 extreme rainfall events in Central and East Europe rise the question, how other basins would respond on such rainfall situations. Such theorisation helps us to arrange in advance the necessary activity in the basin to reduce the consequence of the assumed disaster.

The aim of the study is to recognise a reaction of the Uh River basin (situated in Slovak Republic and Ukraine) to the simulated catastrophic rainfall events from August 2002. Two precipitation scenarios, sc1 and sc2, were created. The first of them was based on August's precipitation from Ybbs (Austria), the second one was based on precipitation from south Bohemia. The rainfall-runoff model HBV-light was used to simulate average daily discharge. These two scenarios replaced observed daily precipitation in each August during the period-1990–1999 and the daily discharge was simulated in Lekarovce gauging station. Peak discharges were computed from the daily averages according to the empirical relationship. In last step, a selection of the best theoretical distribution function of the annual maximum discharge was done using yearly Qmax data series from the period 1931–2001.

Results show the decrease of water accumulation in the Uh river basin and increase of the catastrophic flood risk. According to obtained results it is possible, that such August 2002 runoff event would cause discharges, that would exceed up to time measured values.