

Floods in Brno: history, causes and impacts

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Brno is the second largest city in the Czech Republic (cca 400,000 inhabitants), a centre of southern Moravia. It was always endangered by floods occurring on the Svatka River and the Svitava River. Observed floods were related mainly to intense snow-melting (with rains and also ice-damming) in winter/early spring or heavy precipitation in the summer half-year. Historical and recent changes in catchments of the both rivers influencing floods are described (land-use, regulations of rivers, water reservoirs). Basic analysis of floods is presented for the period of systematic hydrological measurements (water stages or discharges) with respect to their severity (expressed by N-year return period) and seasonality of floods for the four hydrological stations in Brno and its surroundings. Examples of selected flood events with analysis of meteorological causes, hydrological course and impacts are presented. The most severe floods occurred in March 1941 and August-September 1938. Information about floods from the instrumental period is extended by flood information derived from different documentary evidence. Long-term chronology of Brno floods (since 1650) combining documentary and instrumental data is presented and discussed in the context of climate variability.