

Rainfall-runoff regime in the headwater part of the Bystřice River

Abstract

This bachelor thesis deals with the rainfall-runoff regime and analysis of extreme situations in the headwater part of the Bystřice River basin.

At first, the area of interest is described in physical and geographical terms and the influences of individual factors on the runoff are mentioned. The text content is documented by maps. The characteristic of rainfall-runoff regime is evaluated by means of runoff variability parameters. The variability is assessed by means of collected data using charts illustrating exceedance probability of average daily discharges in years 2009 and 2010. The flow variations are evaluated on the basis of decile deviations. The distribution of monthly discharges in the Bystřice River is displayed and the monthly flow variability is described in pie graphs separately for hydrological years 2009 and 2010. The monthly balance of the runoff is also evaluated by means of statistical measures of K_r and C_v coefficients. Finally, the runoff regime evaluation is completed with exceedance probability calculation of the mean annual discharge. The assessment of selected extreme events forms an important part of the thesis.

Extreme situations are compared with synoptic situations; it contributes to explain causal precipitations. All described situations are displayed in the graph.

Keywords: rainfall-runoff regime, Bystřice River, headwater parts, floods