

15. Abstract

The diploma thesis deals with the flood modelling in a downstream part of the river Kocába. Observed segment of the river measures 10,7 kilometres, starts below the village Malá Lečice and ends by the junction with river Vltava. The modelling was performed for 5 yr, 10 yr, 50 yr and 100 yr flood event. The goal of the modelling was to determine the extent of the floodplain and the depth of water in this floodplain during each individual flood event.

For the expenses of the model creation not to be very high, well accessible datasets and software equipment were used for the modelling. Main source of geographical data was ZABAGED database. ArcGIS 9.0 was used for the preparation and processing of the input data as well as for the processing of the results of modelling. The hydraulic computations were performed in software HEC – RAS 3.1.3. Connection between ArcGIS and HEC – RAS was realized using exchange files. The maps outputs were created from results of modelling.

The thesis practically verified possibility of the proposed workflow. Used workflow is general and is applicable on arbitrary area of interest. Maps outputs can serve as the source of information about the extent of floodplain during individual flood events. This information has a lot of applications – for example the information could be used as the basis for the determination of the areas for evacuation before the arrival of the flood wave.