THE ACCURACY OF FLOOD EXTENT SIMULATION BY AN ALTERNATIVE TOOL – AIZM

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The estimation of the extent of inundations is enabled by methods of physical and mathematical modelling which have been developing for many years. Increasing accuracy, related to precise measurements, demands higher computing capacity and more time. There are plenty of river sections with no outputs of hydrological models. At the same time, many cases exist where the water level is known, however the inundation area is unknown.

One of the alternative approaches to visualization of inundations is represented by the AIZM model. This model is based on chaining of several sub-models in the ArcGIS ModelBuilder. All the used tools are located in the ArcToolbox. The AIZM model is able to generate indicative inundation extents and raster of depths with minimal demands for input data and computing time. On the other hand, using this model, one has to take into account that some imperfections are indivisibly present, with regard to some necessary simplifications.

The presented article sums up the initial results of the initial analysis in which the influence of different characteristics of river sections (such as the channel width, the longitudinal profile, anthropogenic influence of channel direction etc.) on the correspondence of the inundation extent modelled by the AIZM model with the reference model outputs. For this purpose, the outputs of 1D or 2D numerical models are used, originating from the mapping of flood hazards and risks in the Czech Republic. This allows identifying different types of river sections where the outputs of the AIZM model are accurate. At the same time, the most determinative river characteristics can be recognized.