



Estimation of changes of the flood regime due to river training

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This study presents a simple general framework that can be used for estimation of changes of the flood regime in consequence of river training. The attenuation of flood waves on alluvial reaches of rivers was influenced by the reduction of flood plain areas by engineering works in the recent past. The change of patterns observed in the travel-time vs. peak-discharge relationships from both pre and post river training periods from small datasets are used to detect and describe the change. The changes detected in the attenuation of floods peaks are subsequently included in the parameterisation of the multilinear discrete cascade flood routing model. With this model the changes in the flood regime are assessed by frequency analysis of flood peaks gained by the simulation of the attenuation of a large series of flood waves for pre- and post-river training conditions. The applicability of the methodology is demonstrated on two case studies on the Morava and Danube Rivers in Slovakia.