

MODELLING HYDRO- AND MORPHODYNAMIC RESPONSES OF RIVER TRAINING STRUCTURES

Fredrik Huthoff, Southern Illinois University, 618-453-7370, huthoff@siu.edu

1. Fredrik Huthoff, Southern Illinois University

In past centuries, many rivers worldwide have been subjected to extensive training structures. These structures are meant to stabilize the river's lay-out and to facilitate river navigation needs. While proven very effective in maintaining depth and position of the navigational channel, river training structures may also yield adverse effects with respect to safety against flooding. Based on field studies it has been suggested that flood water levels in, for example, the Middle Mississippi have increased several meters as a result of river training structures. However, due to the complexity of flow and boundary conditions in the field it is very difficult to identify which fraction of the apparent flood level increase is directly attributable to the presence of river training structures. In the presented work, results from 2D and 3D numerical flow studies are shown, which highlight the hydro- and morphodynamic responses to river training structures and allow estimation of the impact of the structures on flood water levels.