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The deflectors impact on sediment transport processes on the basis of modelling and simulations

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ABSTRACT

The presented research shows deflectors impact on sediment transport processes. The basis to analysis is a hydrodynamic model of downstream part of the Flinta river. The geometry reproduction was performed using spatial data: digital elevation model (DEM) and cross sections of considered reach. The computations were calculated in HEC-RAS 5.0.1, common software used to calculations of water surface profiles and sediment transport. In the research two calculations variants were analysed: (1) with initial geometry of channel and (2) geometry after introducing deflectors. In order to taking into account uncertainty, five scenarios of 10-years flow hydrographs were tested. To calculate intensity of sediment transport Engelund-Hansen formula were used. The results suggest a possible initiation of local scours near the structures.