3D NUMERICAL MODELLING OF LOCAL SCOUR AROUND THE CYLINDRICAL BRIDGE PIERS

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Summary. A 3-D numerical model and a physical model were employed to simulate and predict the local scour depth around a set of three vertical circular piers located in a river. Computations were performed using k-ε turbulence model. The flow was considered unsteady. The Eulerian granular multiphase model for solving related equations was applied. Based on the results, the maximum scour depth occurs around the first pier. The time course tests were showed that 80% of scour hole is extracted in the first hour. The results from the CFD tests showed a good agreement with the experimental data collected from the physical model which an indication of the precision of the chosen CFD procedure.