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## CFD MODELLING OF TURBIDITY CURRENTS

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### ABSTRACT

Reservoir sedimentation results in ongoing loss of storage capacity all around the world. Thus effective sediment management in reservoirs is becoming an increasingly important task. Turbidity currents are the main transport medium for fine sediments in reservoirs and can even redistribute sediments within a reservoir. In the current project the capability of modelling particle driven gravity currents has been implemented into the RSim-3D hydrodynamic code. This has been realised through a buoyancy term which was added as a source term to the z-momentum equation. The model was successfully validated using literature data from lock exchange experiments. Additional focus is put on sediment deposition and remobilization caused by turbidity currents. These phenomena were studied by numerically modelling a flume experiment and observing sediment depositions on a horizontal plane at the end of the flume. In future the model will be applied to a real reservoir to support optimising sediment management.

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