

## CFD Simulation of Surge Wave Generated by Flow-Like Landslides

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**Abstract :** The damage caused by surge waves generated in water bodies by flow-like landslides can be very high in terms of human lives and economic losses. The complicated phenomena occurred in this highly unsteady process are difficult to model because three interacting phases: air, water and sediment are involved. The problem therefore is challenging since the effects of non-Newtonian fluid describing the rheology of the flow-like landslides, multi-phase flow and free surface have to be included in the simulation. In this work, the commercial computational fluid dynamics (CFD) package FLUENT is used to model the surge waves due to flow-like landslides. The comparison between the numerical results and experimental data reported in the literature confirms the accuracy of the method.

**Keywords :** flow-like landslide, surge wave, VOF, non-Newtonian fluids, multi-phase flows, free surface flow

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