Abstract

The avalanche is simulated using the Savage-Hutter model with Finite Volume Method (FVM) as a numerical solution in one dimension. The scheme used in FVM is collocated-grid. The aim of this research is to observe the avalanche based on different sediment types on the incline bed with the same initial sediment height. These simulations produce the value of velocity and height avalanche. For each type of sediment has a difference in velocity and height of avalanche affected by the internal angle of friction and the bed friction angle. Sediments with the highest bed friction angle have highest speed. The simulation is done with two different topography forms. Average velocities for the sediment of Quartz, Yellow Sand, and Rice in simulation 1 are 8.0599, 2.1178, and 12.3521, while in simulation 2 are 7.4369, 2.1178, and 10.6265.

Keywords: savage-hutter model, finite volume method, collocated grid, sediment.