Plinius Conference Abstracts
Vol. 13, Plinius13-121, 2011
13th Plinius Conference on Mediterranean Storms

Modelling tsunamis generated by submarine landslides. Application to real cases in the Mediterranean.

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We present some real applications of the two-layer Savage-Hutter type model developed by E. D. Fernández-Nieto et al (JCP, 2008) to study submarine avalanches. In this model, a layer composed of fluidized granular material is assumed to flow within an upper layer composed of an inviscid fluid (e. g. water). The model is derived in a system of local coordinates following a non-erodible bottom and takes into account its curvature, and it is discretized using a two dimensional high-order finite volume scheme implemented on GPU cards for increasing the speed-up.

Simulation of a paleotsunami occurred in the Alboran Sea is presented focusing on its coastal impact: arrival times, inland advance, wave-height, etc.