Benchmarking Multilayer-HySEA model for landslide generated tsunamis

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Landslide tsunami hazard may be dominant along significant parts of the coastline around the world, in particular in the USA, as compared to hazards from other tsunamigenic sources. This fact motivated NTHMP about the need of benchmarking models for landslide generated tsunamis, following the same methodology already used for standard tsunami models when the source is seismic.

To perform the above-mentioned validation process, a set of candidate benchmarks were proposed. These benchmarks are based on a subset of available laboratory data sets for solid slide experiments and deformable slide experiments, and include both submarine and subaerial slides. A benchmark based on a historic field event (Valdez, AK, 1964) close the list of proposed benchmarks. A total of 7 benchmarks.

The Multilayer-HySEA model including non-hydrostatic effects has been used to perform all the benchmarking problems dealing with laboratory experiments proposed in the workshop that was organized at Texas A&M University - Galveston, on January 9-11, 2017 by NTHMP. The aim of this presentation is to show some of the latest numerical results obtained with the Multilayer-HySEA (non-hydrostatic) model in the framework of this validation effort.

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