



Tsunamis generated by landslides sliding down a conical island: a new experimental study

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A new experimental study has been recently carried out in the offshore wave tank (50 by 30 meters in plan) at LIC of Bari University. A conical island of radius 12 meters and slope inclination 1:3 has been realized in the tank, and an elliptically shaped solid body entering water has been used to simulate the tsunamis generation. The realized geometry constitutes both an ideal situation to test mathematical and numerical models, and also the simplified geometry of the Stromboli island.

Indeed, if the model is considered in a 1:1000 scale and Froude similarity, it can be viewed as the first physical experiment of landslides generated tsunamis from the Sciara del Fuoco of Stromboli.

At this purpose, this study focuses on the generation of tsunamis propagating in the open sea and also on edge waves trapped to propagate along the island shoreline. The work has been carried out in the framework of a research program funded by MIUR, the Italian Civil Protection Department and the National Dam Office, whose targets are to provide experimentally based formulations and to set up numerical models able to simulate real scenarios of tsunamis generated by landslides.