



The Messina Straits 1908 tsunami: tide-gage, run-up and the causative source

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After a whole century, the causative source of the tsunami remains one of the most discussed issues about the 1908 earthquake. Recently, two papers reached substantially opposite conclusions and have raised the debate again. The authors of the first paper hypothesize that the origin of the tsunami should be related to a large submarine landslide; conversely, the second paper demonstrates that the run-up distribution along the Sicilian and Calabrian coast is much more compatible with a tsunami generated by a seismic fault than by a submarine landslide.

We digitized two historical tide-gage waveforms, recorded at Malta and Naples. We use these data along with run-up data to investigate the causative source of the tsunami. We discuss several scenarios, by means of forward and inverse modeling.

We conclude that proposed seismic sources are not sufficient to explain the observed tsunami, both in the near- and far-field, and additional seismic slip and/or a submarine landslide is needed.