



Contribution ID: 52 Contribution code: S10-MG-202

Type: Poster presentation (virtual)

Tsunami Numerical Modelling in the Eastern Ionian Sea

Wednesday, 31 August 2022 11:08 (2 minutes)

This study is an attempt to identify several tsunamigenic sources located offshore in the vicinity of Peloponnese Peninsula, Kefalonia and Lefkada. Ionian Sea is surrounded by major geological structures, like the Hellenic and the Calabrian subduction zones and in addition its lithosphere is submerging beneath Eurasian tectonic plate. These tectonic features are the main cause for devastating earthquakes and tsunami waves. In the seismic history of the Ionian Sea there are several strong earthquakes that generated tsunami waves in the southern Peloponnese 1867 ($M_s7.1$), Ithaca Island 1915 ($M_s6.7$), north of Kefalonia 1948 ($M_w6.5$) and Lefkada 2015 ($M_w6.5$). Considering several seismic sources located in the eastern Ionian Sea in agreement with the European Database of Seismogenic Faults we present results of numerical simulations of the tsunami generation and propagation using the model UBO-TSUFDF (Tinti and Tonini, 2013). The code is based on the nonlinear shallow-water equations of Navier-Stock. Okada's method (1985) is used to compute the initial tsunami elevations. Known focal mechanisms associated with recent earthquakes are selected for the hypothetical tsunamigenic scenarios. Tsunami simulations results are shown as maximum water elevations and propagation fields. The contribution of all scenarios along the Peloponnese, Kefalonia and Lefkada is studied via synthetic mareograms. The water column on the coastline is computed and presented as simplified colored map.

Acknowledgements: The first author would like to thank the Tsunami Research Team from University of Bologna for the opportunity to work with UBO-TSUFDF. This paper was supported by the project CP-06-COST-7/24.09.2020 "Tsunami Hazard Assessment in the Southeastern European region", funded by BNSF. The first author (LD) contributed to the European Cooperation in Science and Technology COST project "AGITHAR-Accelerating Global science In Tsunami HAZard and Risk analysis".

Primary author: DIMOVA, Lyuba (Dept. Meteorology and geophysics, Faculty of Physics, Sofia University "St. Kliment Ohridski")

Co-author: Dr RAYKOVA, Reneta (Sofia University)

Presenter: DIMOVA, Lyuba (Dept. Meteorology and geophysics, Faculty of Physics, Sofia University "St. Kliment Ohridski")

Session Classification: Poster session (virtual)

Track Classification: Scientific Sections: S10 Meteorology and Geophysics