

## Earthquake-induced tsunamis in the northwestern Black Sea

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The study is focused on the earthquake-induced tsunamis in the northwestern Black Sea, as well as on the impact on Bulgarian, Romanian and Ukrainian Black Sea coasts. Several seismic events occurred in the observed area over the centuries, some of them in the past few years. Few seismic sources that could generate tsunami waves in the region were examined and their effect on the coastal area was evaluated. The numerical modeling tool for generation and propagation of tsunami waves, known as UBO-TSUF and developed in the University of Bologna, was applied. The methodology is based on the non-linear shallow-water wave equations, utilizing Cartesian frame and explicit leapfrog finite-difference technique on a staggered grid. Moving boundaries in the calculation of the coastal inundation and withdrawal were considered. The maximum value of magnitudes for historical sources and recent focal mechanism solutions were employed in the modeling. Bathymetry with different steps from 0.5 degree to about 8 seconds was used for a more reliable estimation of water level and local effects.