Geophysical Research Abstracts
Vol. 17, EGU2015-2701, 2015
EGU General Assembly 2015

Tsunami modeling Scenarios for the Western Black Sea, Shabla seismic area

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Although a rare natural phenomenon, tsunami type events in the Black Sea had been generated, past studies showing more than twenty events (Altinok Y., 1999).
The western Black Sea could mostly be affected by earthquakes generated in Shabla area, the most known event being generated on 31st of March 1901, when an earthquake with Mw = 7.2 triggered tsunami waves up to 5 m height (Papadopoulos et al., 2011).
In order to generate a tsunami in the Black Sea area, earthquakes should mainly follow some conditions: a) to have a magnitude Mw > 6.5; b) to have a focal depth h < 40 km and c) to have an inverse or normal fault focal mechanism.
A recent earthquake generated in Shabla area on 05.08.2009, at 07:49 UTC, was taken into consideration for running tsunami scenarios. The following parameters were used as initial conditions: earthquake location (Latitude and Longitude) and one plane solution with preset fault parameters (Strike, Dip, Rake, Width, Length). A set of 18 different tsunami modeling scenarios have been run, varying the Magnitude (Mw = 7, 7.5 and 8) and the Depth (5 km, 10 km and 30 km).
The software used for generating the tsunami modeling scenarios is Tsunami Analysis Tool (TAT), developed by Joint Research Centre (JRC) of the European Commission.
After analyzing and comparing the generated tsunami modeling scenarios, minimum values of magnitude for tsunami waves generation were evaluated for the Shabla seismic source. For some of the scenarios no tsunami waves were generated. The worst case scenario is for a depth of 5 km, a magnitude Mw = 8, the tsunami waves heights reaching 0.8 m in Kranevo (Bulgaria). The maximum wave heights and some of the affected locations for this scenario show that at Costinesti, Mangalia, Techirghiol cities the waves will reach 0.6 m height and respectively 0.5 m at Constanta city.
According to these scenarios, the tsunami generated waves can vary as follows: increasing the depth from 5 to 10 and 30 km will lead to lower heights or no waves generation. Also a magnitude increase from 7 to 7.5 and then to 8 will lead to maximum waves generation.