Geophysical Research Abstracts, Vol. 7, 09870, 2005
SRef-ID: 1607-7962/gra/EGU05-A-09870

Tsunamis in Portugal - Numerical Simulation of the 26.05.1975 Gloria fault tsunami

Pedro M. M. Soares (1,2), M. A. Baptista (1,2), J. M. Miranda, (1) and F. Kaabouben (3)

(1) Centro de Geofísica, Universidade de Lisboa, Campo Grande C8 (3-26), 1749-016 Lisboa, Portugal, pmsoares@fc.ul.pt (2) DECivil, Instituto Superior de Engenharia de Lisboa, Portugal (3) Centre National pour la Recherche Scientifique et Technique, Rabat, Maroc

The Portuguese mainland coast has been affected by moderate and strong submarine earthquakes that generated tsunamis. The most significant is the well know Lisbon event generated by the 8.75 earthquake that devastated the Iberian Peninsula. Along the Azores coast several tsunamis have been reported: 1522, 1614, 1757 and 1837. Although not very frequent along the Portuguese coasts the social and economic impact of great tsunamis is nowadays greatly amplified by the existent urban concentration near coastal areas in Portugal, mainland and Azores. The 26 May 1975 earthquake of Ms= 7.9 magnitude, with epicentre located in the North Atlantic south of Gloria Fault, produced a tsunami detected in the coastal tide stations of Portugal mainland, Azores and Cadiz in Spain. In this paper we evaluate the tsunami source, using an elastic half-space model and we compute the synthetic tsunami propagation, using a non linear shallow water model. Synthetic results are compared with mareograms for travel times, amplitudes and periods, and the tsunami source is compared with the seismic source.