



NEARTOWARN: A new EU-DG ECHO-supported project for the near-field tsunami early warning

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The early warning for near-field (local) tsunamis, with travel times of no more than about 30 min. from the tsunami source to the closest coastal zones, is today a hot topic of great importance in the international effort to reduce the loss of human lives and to mitigate other tsunami risks. Particularly, in the Mediterranean region earthquakes, and more rarely volcanic eruptions and landslides, produce near-field tsunamis threatening nearly all the coastal zones but mainly those in the Hellenic Arc and Trench (South Peloponnese, Cyclades, Crete, Rhodes, SW Turkey), in the Corinth Gulf (Central Greece), in the Messina strait and the east Sicily (Italy) in the Ligurian Sea, the Algeria and the Balearic islands, in the west Mediterranean basin, and the Cyprus-Lebanon area in the easternmost Mediterranean. The North East Atlantic and Mediterranean Tsunami Warning System (NEAMTWS), which is under construction with the supervision of the Intergovernmental Oceanographic Commission, is oriented to issue warnings only in regional scales, that is for about 1 hour of tsunami propagation time. For near-field warning it is unrealistic to rely on a unique system for the entire basin. Instead, several local systems working on the basis of some joint principles but with local adjustments is the most promising solution. This is exactly the aim of the new project NEARTOWARN (Near-field Tsunami Warning) which is supported by the EU DG-ECHO. Partnership includes the National Observatory of Athens (Coordinator, Greece), the University of Bologna (Italy), the University of Cyprus, the ACRI-ST (Sophia-Antipolis, France), the University of Cantabria (Spain) and the Municipality of Rhodes. The main concept is to develop a prototype local early tsunami warning system. To minimize the time for emergency in less than 30 sec, seismic alert devices (SED's) make the core component of the system. SED's are activated and send alerting signals as soon as a P-phase of seismic wave is detected in the near-field but for a predetermined threshold of ground motion. Then, emergency starts while SED's activate remotely other devices, such as computers with data bases of pre-calculated tsunami simulations, surveillance cameras etc. The system is completed with tide-gauges, simulated tsunami scenarios and emergency planning supported by a Geographical Management System. Rhodes island in Dodecanese, South Aegean Sea, Greece, has been selected as a test-area for the development of the prototype system.