Geophysical Research Abstracts
Vol. 15, EGU2013-2230, 2013
EGU General Assembly 2013


# New Directions in Seismic Hazard Assessment through Focused Earth Observation in the MARmara SuperSITE

Nurcan Meral Ozel (1), Ocal Necmioglu (1), Paolo Favali (2), John Douglas (3), Pierre Philippe Mathieu (4), Louis Geli (5), Onur Tan (6), Semih Ergintav (6), A. Oguz Ozel (7), Cemil Gurbuz (1), and Mustafa Erdik (1)

(1) Kandilli Observatory and ERI, Bogazici University, Geophysics Dept., Istanbul, Turkey (ozeln@boun.edu.tr), (2) INGV, Italy, (3) BRGM, France , (4) ESA, Netherlands, (5) IFREMER, France, (6) Tubitak, Turkey, (7) Istanbul University, Turkey

Among the regions around the Mediterranean Sea for which earthquakes represent a major threat to their social and economic development, the area around the Marmara Sea, one of the most densely populated parts of Europe, is subjected to a high level of seismic hazard. For this region the MARSITE project is proposed with the aim of assessing the "state of the art" of seismic risk evaluation and management at European level. This will be the starting point to move a "step forward" towards new concepts of risk mitigation and management by long-term monitoring activities carried out both on land and at sea. MARsite will serve as the platform for an integrated, multidisciplinary, holistic and articulated framework for dealing with fault zone monitoring, capable of developing the next generation of observatories to study earthquake generation processes. The main progress will be the fusion of ground- and space-based monitoring systems dedicated to geo-hazard monitoring. All data (space/sea-bottom/seismology/borehole/geochemistry) will flow to KOERI and hosted in and served via a secure server.

The MARSITE project aims to coordinate research groups with different scientific skills (from seismology to engineering to gas geochemistry) in a comprehensive monitoring activity developed both in the Marmara Sea and in the surrounding urban and country areas. The project collects multidisciplinary data, to be shared, interpreted and merged in consistent theoretical and practical models suitable for the implementation of good practices to move the necessary information to the end users in charge of seismic risk management of the Istanbul–Marmara Sea area.

Marsite is divided into eleven work packages that consider the processes involved in earthquake generation and the physics of short-term seismic transients, 4D deformations to understand earthquake cycle processes, fluid activity monitoring and seismicity under the sea floor using existing autonomous instrumentation, early warning and development of real-time shake and loss information, real- and quasi-real-time earthquake and tsunami hazard monitoring and earthquake-induced landslide hazard.