



## **Integrated multidisciplinary fault observation in Marmara Through MARSite – Project Progress**

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This presentation provides a progress overview of the EC/FP-7 MARSite Project started in November 2012, which aims to coordinate research groups ranging from seismology to gas geochemistry in a comprehensive monitoring activity developed both in the Marmara Region based on collection of 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 region. In addition, 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 topics are also covered within MARSite. This presentation would provide a report on the progress achieved during the half-life of the project. In this respect, the main data server for the integration of real time network data has been finalized. Daily evaluation of online spring water and soil radon gas data in relation to seismic activity is in place, together with the continuous GPS data processing. A significant combination of postseismic (viscoelastic) deformation and afterslip was detected in the western segment of the 1999 Izmit rupture plane based on InSAR modeling. The optimum borehole depths have been identified based on seismic reflection studies and GURALP Systems is continuing its work on the manufacturing the borehole system. Seismic risk study for IGDAS Natural Gas Network including pipelines and its components has been carried out with several earthquake scenarios in Marmara Sea and an automatic shut-off algorithm has been developed for the automatic shut-off of the gas flow at the IGDAS district regulators during an extreme event. This work is funded by the project MARSite - New Directions in Seismic Hazard assessment through Focused Earth Observation in the Marmara Supersite FP7-ENV.2012 6.4-2, Grant 308417.