



Deformation Monitoring by Borehole Geodetic Strainmeter in Turkey

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This project is aimed to study three-dimensional strain field resulting from deformation through North Anatolian Fault System (NAFS) in Marmara Region, Turkey. Within this project, two borehole observatories consisting of borehole strainmeters, borehole seismometers, tiltmeters, and pore pressure sensors have been deployed in Istanbul. These installations have been supported by Istanbul Development Agency (ISTKA) (financially) and UNAVCO (technically). Istanbul, located near the most active parts of the North Anatolian Fault, has been monitored by different observing techniques such as seismic networks and continuous/survey-mode GPS networks for decades.

Borehole strainmeters are very sensitive to deformation in the range of less than a month and can capture signals with superior precision at local spatial scales. In this project, it will be possible to determine the movements precisely which can not be monitored with available measurement systems in the middle and the eastern part of Marmara Sea through NAFS. Our long term objective is to build a borehole monitoring system in the region. By integrating various data obtained from borehole observatories, we expect to get a better understanding of dynamics in the western NAF. In this presentation, we introduce data and ongoing analysis obtained with strainmeters.