

## GPS MEASUREMENTS ON THE WESTERN MARMARA SEGMENT OF NORTH ANATOLIAN FAULT

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### ABSTRACT

The one of the most important faults of world is the North Anatolian Fault (NAF) which range from Bingöl in the east to The Aegean Sea in the west. There have been a lot of destructive earthquakes occurred in the last century along the NAF (9 August, 1912 Saros-Marmara: Ms=7.4, 4 January, 1935 Marmara: Ms=6.4, 18 March, 1953 Yenice-Gönen: Ms=7.2, 18 June 1953 Edirne: Ms=5.2, 18 September, 1963 Yalova-Çınarcık: Ms=6.4, 6 October 1964 Manyas: Ms=6.9, 23 August 1965 Saros: Ms=5.9, 22 July 1967 Mudurnu-Adapazarı: Ms=7.1, 27 March 1975 Saros: Ms=6.6). Therefore, several seismic, geological, geophysical and geodetic researches have been done by international and national earth scientists during the last six years.

The project “The Determination of Deformations Along The Western Marmara of North Anatolian Fault and Characterization of Earthquake Hazard”, founded by The Scientific and Technical Research Council of Turkey (TUBITAK) and Istanbul Technical University (ITU) Research Fund covers western part of the NAF from Balıkesir (in eastern Marmara) to Gökçeada (in western Marmara). The aim of the project is to obtain the information of the strain accumulation along fault zone and to determine the earthquake potential. Having information about the strain accumulation along the fault zone may allow to evaluate future probabilities of regional earthquake hazards and to develop earthquake scenarios for specific faults.

Three years of measurements from 2003 to 2005 have been carried out with 15 sites in 3 days period. The data processed by using GAMIT/GLOBK software. Daily solutions, combination of daily solutions, repeatabilities and annual combinations have been obtained and will be presented in this study with geological interpretations of study area obtained from GPS velocity vectors and local field studies.