

## Recent Creep Rate of Ismetpasa Segment of North Anatolian Fault (Turkey) inferred from 7-years GPS Observations

Özener, H., (1), Ergintav, S., (2), Doğan, U., (3), Çakır, Z., (4), Dogru, A., (1), Turgut, B., (1), Yilmaz, O., (1), Halicioğlu, K., (1), Sabuncu, A., (1), Havazlı, E., (1)

- (1) Boğaziçi Üniversitesi, KRDAE - Jeodezi AD., İstanbul, Turkey  
(2) TÜBİTAK, MRC, Earth and Marine Sciences Institute, Kocaeli, Turkey  
(3) Geodesy and Photogrammetry Engineering Dep. Yıldız Üniversitesi, İstanbul, Turkey  
(4) İstanbul Technical University, Dep. of Geological Engineering, İstanbul, Turkey,  
Corresponding Author: Özener, H., (ozener@boun.edu.tr)

The study area is situated in the central part of the creeping segment of North Anatolian Fault (NAF), extending from the vicinity of Ismetpasa in the west to Hamamli village in the east (350 km east of İstanbul). The largest known earthquakes in this region occurred in 1944 (Gerede earthquake,  $M_w=7.2$ ) and in 1951 (Kursunlu earthquake,  $M_w=6.9$ ). Both earthquakes were related with NAF and cover the Ismetpasa region from west to east, respectively. Creep at Ismetpasa has been studied in different time scales with different techniques by various researchers since its discovery by Ambraseys in 1969. Data coming from these studies provides us that the average creep rate is approximately 7mm/yr between the years of 1969 and 2002. Since 2005, we apply GPS technique annually on the micro-geodetic network that made up of 6 sites installed in 1972 by General Command of Mapping. We present results from 7 years of GPS observations of creep at Ismetpasa section of NAF. According to our results, the creep rate is around 8mm/yr and it shows exponential decrease since 1944 earthquake. In order to improve our understanding of creeping, geodetic data (conventional surveying, GPS, InSAR, LIDAR) should be combined with other observations such as strainmeters, hydrological, etc.