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Neotectonic Features and Kinematics of the North Anatolian Fault in Taşkesti (Bolu), Nw Turkey

Duygu İşbil
Turkey (duygu_isbil@hotmail.com)

Duygu İŞBİL, Hayrettin KORAL
Istanbul University, Department of Geological Engineering, Istanbul, Turkey

The North Anatolian Fault (NAF) has predominantly NW-SE orientation in eastern Turkey and is transformed into an E-W trending in vicinity of the Taşkesti (Bolu) area. The fault forms a border between two different tectonic units in the region, the Almacık Group and Abant Melange in the north and a continuous sedimentary sequence of Jurassic-Eocene in the south. Lacustrine Pliocene deposits unconformably overlie the southern sequence in places, and also, there are fluvial and colluvial deposits younger than the Pliocene. These deposits are controlled by geometry of faults in the North Anatolian Fault system. The depositional characteristics of these deposits demonstrate that the North Anatolian Fault is dominated by a transtensional regime through the Quaternary. Kinematic features collected in the late Neogen sediments are consistent with the fault segment near Taşkesti that became active during the 26 May 1957 Abant (M=7.1) and 22 July 1967 Akyazı-Adapazarı (M=6.8) earthquakes.

Key words: North Anatolian Fault (NAF), Plio-Quaternary deposits, Earthquake, Transtension.