Geophysical Research Abstracts
Vol. 13, EGU2011-2920-2, 2011
EGU General Assembly 2011

Tectonic Setting of the Ophiolitic Melanges South of the Marmara Sea Between the Izmir-Ankara and Intra-Pontide Sutures

Semih Can Ülgen (1) and Aral I. Okay (1,2)

(1) Istanbul Technical University, Eurasian Institute of Earth Sciences, Maslak, Istanbul, 34469, Turkey (ulgensem@itu.edu.tr), (2) okay@itu.edu.tr

An ophiolitic mélange and associated metamorphic rocks crop out south of the Sea of Marmara in the Mudanya-Zeytinbağı region. The oldest rocks in the area studied are low-grade greenschist facies metamorphic sequence consisting of metabasite, phyllite, metachert and marble. They are tectonically juxtaposed with serpentinite slices and an ophiolitic mélange of greywacke, basalt, diabase, recrystallized limestone and radiolarite. The metamorphic rocks and the melange are unconformably overlain by Paleocene limestone and are in fault contact in the north with a thick Eocene sequence of siliciclastic turbidites and volcanic rocks. The Eocene turbidites contain horizons of olistostromes and debris flows with clasts derived from the ophiolitic melange. The lithological features of the melange are similar to the Cretaceous subduction-accretion complexes, which crop out widely along the İzmir-Ankara and Intra-Pontide sutures. The tectonic setting of the melange and the transport direction are studied through detailed mapping and structural studies. There are two possibilities: the melange could either have been derived from the south from the İzmir-Ankara suture or from the north from the Intra-Pontide suture.