

Neotectonic outline of the Turkish-Georgian border area

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The study area is located in both Turkish and Georgian sides of the border area between north latitudes of 41⁰⁰'-42⁰⁰' and east longitudes of 41³⁰'-43³⁰', covering an approximate area of 10.500 km². This area is a characteristic example, which including structures of the neotectonic compressive regime of the Caucasus and strike-slip regime of Eastern Anatolia together, and it is also more or less seismically active.

In the Georgian part, the neotectonic regime has been lasting since, at least, Oligocene and it is characterized by compressive structures such as the WNW- and W-E trending southward and/or northward high-angle thrust fault zones and intermountain basins such as the Ahaltsikhe depression.

In contrast to the neotectonic regime in the Caucasus, the prominent neotectonic regime in the Turkish part is the strike-slip in nature. It is initiated in Late Pliocene, and is remarkably indicated by an angular unconformity separating the folded-thrust faulted Miocene-Lower Pliocene rocks, which are the youngest paleotectonic units in the study area from the undeformed Plio-Quaternary sequences of dissimilar facies and settings. In the Turkish part, the strike-slip neotectonic regime is characterized by NE-to NW-trending sinistral to dextral strike-slip faults. The av at-Posof fault zone and the Kura fault zone can be mentioned among the well developed strike-slip structures. In the addition, Posof, Hanak and Akta (Hozapine)-Ahalkalaki basins are developed under the control of strike-slip movements, which contain Plio-Quaternary basaltic eruptions with fluvio-lacustrine clastics.and/or fluvio-glacial and alluvial deposits.

After evaluating the data at regional scale and also present above, it is concluded that main neotectonic structures of the Caucasus and Eastern Anatolia appear to be active under the control of the N-S directed compressional processes, resulted from the convergence between the fragments of the Arabian and Eurasian plates.