

MORB- and SSZ-type mafic rocks from the eastern part of the Ankara-Erzincan-Sevan-Akera Suture Belt: Preliminary geochemical data

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The Izmir-Ankara-Erzincan-Sevan-Akera Suture Belt stretches from the Aegean Sea to the Lesser Caucasus and includes the remnants of the Northern Neotethys. The Ovacık and Pülümür ophiolitic complexes to the north of Tunceli are less-known members of this belt. In this study preliminary geochemical data from the basaltic and gabbroic rocks from these complexes is presented to give the first insights into their petrogenesis.

The studied mafic samples overall exhibit geochemical characteristics of an intra-oceanic subduction system. Three groups of samples were differentiated on the basis of their major, trace and REE geochemistry. The first group is largely akin to back arc basin basalts (BABB) and displays enrichment in large ion lithophile-elements (LILE) coupled with negative Nb anomalies. It generally reflects normal-MORB (N-MORB)-like high field strength element (HFSE) patterns. The second one is relatively similar to the BABB-type, but it lacks the marked negative anomaly in Nb and can be ascribed to the mid-ocean ridge basalt (MORB). The third one is mainly boninitic and shows relative enrichment in LILE over HFSE; however it is distinct with highly depleted elemental pattern (relative to N-MORB) and concave REE profile.

The overall geochemical features suggest that these mafic rocks were predominantly generated in a supra-subduction setting from a subduction-modified mantle source. It is further suggested that the Ovacık and Pülümür ophiolitic complexes were formed in an oceanic arc-basin system within the northward subducting Northern Neotethys.