



New Petrological Data From the Western Termination of East Anatolian Accretionary Complex (EAAC), Eastern Turkey

Alican Aktağ (1), Ayten Öztüfekçi Önal (1), Taylan Sançar (1), Ali Önal (1), and Okay Çimen (2)

(1) Tunceli Üniversitesi, Jeoloji Mühendisliği Bölümü, Tunceli, TURKEY, (2) ODTÜ, Jeoloji Mühendisliği Bölümü, Ankara TURKEY

Geodynamic characteristics of the East Anatolian Accretionary Complex (EAAC) have been one of the major research topic for last a few decades. The models hitherto try to interpret the role of Tertiary volcanism in EAAC were not wealthy, due to the few geochemical, isotopic and radiometric age data. Furthermore, since boundary of EAAC is delimited by geophysical methods, discussion about relationship between EAAC volcanism and other volcanics, which is close proximity with EAAC, is not sufficiently examined. To provide new data, this study focused to western termination -Tunceli Tertiary volcanic rocks- of EAAC. The most important reason for this target is the lack of analytical studies and insufficient data about petrographic-petrologic characteristics of the Tunceli Tertiary volcanic rocks. Volcanic rocks of these study area classified into two main groups; Lavas and Pyroclastics. Lavas include only basalts in the study area. Pyroclastics rocks consist of tuff, lapilli tuff and blocks. According to petrographical studies, basalts include three main minerals; plagioclase, olivine and clinopyroxene. Pyroclastic rocks formed by andesitic and basaltic clasts. In the study area the most dominant textures of the lavas are porphyritic and intergranular textures. Almost all of the volcanic rocks have suffered alterations which gave rise to the formation of secondary minerals such as sericite, serpentine and iddingsite. According to the petrochemical evidences, the characters of magma are identified into two series; alkaline and calc-alkaline. Some of the samples have a tendency to potassium enrichment; probably these results indicate a crustal contamination. Major and trace element analysis of thirty samples, revealed the volcanic arc and WIP characteristics of Tunceli volcanic rocks. According to the N-type MORB normalized trace element diagrams, these volcanic rocks are enriched by LIL elements while HFS elements are relative depleted. In addition, negative Nb and Ti anomalies indicate that this situation have resulted from subduction-related events or crustal contamination. All in all, these data clearly indicate that volcanic rocks in Tunceli have great correlation with Tertiary volcanic rocks of EAAC. Ongoing isotopes and age determination studies will be more starkly put forward the relationship between volcanic rocks of EAAC and Tunceli.