

INTERPRETATION OF NEW GEOCHEMICAL, RADIOMETRIC AND ISOTOPIC DATA ON EASTERN AND SOUTHEASTERN ANATOLIA

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ABSTRACT.— Collision zone volcanism that had started at Middle Miocene in Eastern and Southeastern Anatolia was examined. Major, trace and rare earth element analyses, measurements of the strontium isotope ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) and radiometric dating by K/Ar method of the samples from various regions were carried out. Diagrams that were plotted according to major element contents of the volcanic rocks show calcalkalic, alkaline and partly tholeiitic features. Volcanic rocks were named according to petrography and the results of the chemical analysis. Trace element contents of the volcanics generally fit the mean values of the upper continental crust, partly the mean values of lower crust and rarely the mean values of the mantle. Sr isotope ratios of the samples range between 0.70350-0.70640. These results indicate that the crustal slab related to the subducting Arabian plate contaminated the magma which formed the volcanics. According to K/Ar datings the oldest age of  $11.4 \pm 0.9$  my is from Eleşkirt Köseadağ dacites and the youngest age of 30,000 years are from obsidians of Nemrut Mountains and trachyandesitic lavas of Tendiirek Mountains. The distribution of the volcanics of the Eastern and Southeastern Anatolia and their volcanologic, geochemical, petrographic, radiometric, isotopic features are discussed.