



Radiogenic Heat Production in the Gölcük Caldera and Direkli, Isparta Angle (Southwest Anatolia)

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Abstract

The radiogenic heat is one of the important parameter due to the radioactivity has existed since beginning of universe as prediction of Big-Bang theory. In this study the radiogenic heat production of the Gölcük caldera and Direkli fields of the Isparta-Turkey, has been investigated. Total of 1390 data were obtained in the study area. The study area is included of the Gölcük volcanism and its around that is located in Isparta province of Turkey's Mediterranean region. The Gölcük volcanism is a young volcanism. Around this volcanism the andesite, trachy andesite, tuff, pumice and such a geological units is available. The data were collected using in-situ measurements with gamm-ray spectrometer. These measurements were covered natural radioactive elements (Uranium U, Thorium Th and Potassium K). Radiogenic heat production values were calculated using the literature relationships and in-situ measurement values of these radioactive elements. Radiogenic heat map of study area were obtained using radiogenic heat production values. In the map the red zone areas shows highest heat values while green zones areas of the map presents lowest heat values.

Key words: Radioactive elements, radiogenic heat, map, Gölcük-Direkli(Isparta), Turkey