
Preliminary Results Of Gamma-Ray Measurements In Bodrum Peninsula; SW Turkey

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Since the beginning of the universe, natural radioactivity has existed. The most important sources of natural radioactivity are Uranium - ^{238}U , Thorium - ^{232}Th , Potassium - ^{40}K and their decay products. Gamma-ray spectrometry is one of the most practical methods that allows the measurement of concentrations of radionuclide elements. These elements have significant effect on internal heat source of the earth and contribute to terrestrial heat flux by producing heat. Bodrum Peninsula is located in Aegean Region, southwest of Turkey. This study field has a complex tectonic structure and it is affected by Aegean volcanic arc and the subduction zone between African oceanic lithosphere and the Aegean continental lithosphere. In this study, distribution maps of eU, eTh, K in the southwest of Anatolia where considered to be continuation of Aegean Volcanic arc have been constituted by using concentrations of radionuclide elements. Additionally, radioactive heat – producing map (RHP) of eU, eTh and K has been calculated and drawn as anomaly map. Obtained results have been compared with geological units (volcanic and non – volcanic units) located in the study field. Concentrations of eU, eTh and K reach up to maximum values (115.02 Bq/kg, 103.84 Bq/kg and 690.1 Bq/kg, respectively) in volcanic area (especially, in Bodrum Peninsula). According to interpretation results, obtained high RHP values in western part of the study field correspond with continuation in land of Aegean Volcanic arc.