



Contribution ID: 119

Type: Poster

## Measurement of environmental gamma radiation in province of Kütahya

Thursday, 3 September 2015 16:30 (1h 30m)

All living organisms on earth are exposed to natural radiation because of the earth's radiation. Natural external radiation consists of cosmic rays and terrestrial radiation. Terrestrial gamma radiation, to a large extent comes from natural radionuclides in the soil, i.e. the U-238, Th-232 and K-40. Cosmic rays are the radiations from outer space to the earth. In this study, U-238, Th-232 and K-40 activity concentrations of 355 soil samples collected from the center of Kütahya, counties and towns were determined by using NaI(Tl) detector. The gamma dose rates in air were measured from a height of 1 m  $\mu\text{R/h}$  as in the unit of by Ludlum 2241-3RK portable handheld detector at the points where the samples were collected. By using gamma dose rates in air and in the soil, the annual effective dose values were calculated for the city of Kütahya. At the end of our study, U-238, Th-232 and K-40 activity concentration and effective dose values calculated for radioactive nuclei were compared with UNSCEAR and studies that have been performed for various parts of the world.

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**Session Classification:** Poster