

SOIL MOISTURE AND ITS EFFECT ON GAMMA RADIATION LEVEL AT THE AIR-GROUND INTERFACE

Ajayi, N. O¹., Abajingin, D. D¹, Adegbuyi, O². & Olowomofe, O. H¹

1. Department of Physics and Electronics, Adekunle Ajasin University, Akungba -Akoko. NIGERIA
2. Department of Geology, Achievers' University. Owo. NIGERIA

ABSTRACT

Measurements of environmental gamma radiation level at the air-ground interface were made at three separate sites L₁, [Lat N07° 27' 17'' and Long E 05° 43' 50'']; L₂, [Lat N 07° 27' 56'' and Long E05° 44' 09''] and L₃, [Lat N07° 28' 44'' and Long E05° 45' 27''] in Adekunle Ajasin University, Akungba Akoko, Nigeria. Measurements of gamma radiation level and the water percentage of the top soil were made at each site at different times of the year. The data obtained throughout the whole year obeys a power law showing a decrease of gamma ray count per second with increase in top soil percentage water (% water). The data was discussed in terms of the solubility in water of the radioactive radon emanating from the underground geological basement. The contribution that the soil % water has on the concentration of radon in rooms with faulty and or cracked floors is also discussed.

Keywords: Percentage water, radon, gamma ray, soluble.