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PRELIMINARY RESULTS MEASURING THE GAMMA DOSE RATE DISTRIBUTION IN NORTH EASTERN BURKINA FASO WHERE THE CONCENTRATION OF URANIUM IN THE SOIL IS ELEVATED

Cedric Elisee Beogo[1], Ousmane Ibrahima Cisse[2], Abdoul Razak Kanazoe[3], Abdoul Razakou Maiga[4], Francois Zougmore[5]

[1,2,3,5]Research Scholar, Laboratory of Materials and Environment (LAME), University Joseph KI-ZERBO 03 BP 7021 Ouagadougou, Burkina Faso

[4]Research Scholar, National Authority of Radiation Protection and Nuclear Safety (ARSN) 03 BP 7044 Ouagadougou, Burkina Faso

ABSTRACT

On this paper, the gamma dose rate is measured using the IdentiFINDER device which is equipped by a portable gamma-ray spectrometer. Horizontal and depth profiles are then obtained in the study area. The measurements are performed at one meter above the ground and under variables depths often reaching 100 cm on a determined geographical point of interest. The dose rate at one meter above the ground varies between 0.050 $\mu Sv.h^{-1}$ and 0.300 $\mu Sv.h^{-1}$. The mean value in the study area is about 0.128 $\mu Sv.h^{-1}$ which is well higher than the world average of gamma dose rate from natural radioactivity. It is also higher than the established limit of gamma dose rate for the international recommendation of public exposure to the natural source of ionizing radiation. The gamma dose rate also rises with the depth and this variation confirms the terrestrial origin of the anomaly.

KEYWORDS: *Gamma Dose Rate, High Background Radioactivity Area, IdentiFINDER, Natural Radioactivity*

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