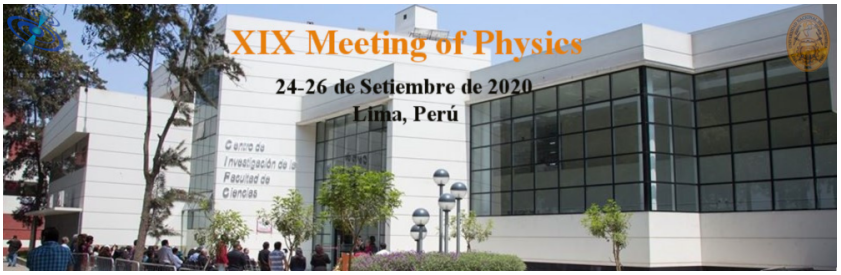

Contribution ID : **75** Type : **poster**

Temporal variation of soil radon/thoron concentration using passive detecting method in San Miguel district, Lima, Peru

Saturday, 26 September 2020 10:20 (10)

Soil is the main source of radon and thoron due to the uranium and thorium content [1]. Alpha particles emitted in the decay of these natural radioactive elements produce nuclear reactions in the ground, increasing the levels of ionizing radiation. Therefore, measure of soil radon and thoron concentrations is important. Generally, these measurements are made using active systems compound of an air extraction pump with 1-m long steel soil probe and a desiccant [2]. In the present study, continuous monitoring was carried out for two months using pinhole based single entrance twin cup dosimeters [3] inside wells 80 cm deep with respect to ground level. Radon and thoron concentrations were measured in 24 wells located in San Miguel district for periods of two weeks. The results obtained were analyzed with the environmental parameters obtained in the Photovoltaic Research Laboratory - PUCP.

Keywords: Soil radon/thoron concentration; twin cup dosimeters, soil, temporal variation

References:

[1] Sharma, S., Kumar, A., Mehra, R., & Mishra, R. (2018). Assessment of Soil Gas Radon and Exhalation Studies in Lower Himalayan Region of Jammu and Kashmir State, India. Pure and Applied Geophysics, 175(12), 4411-4426.

[2] Kaur, M., Kumar, A., Mehra, R., & Mishra, R. (2018). Study of radon/thoron exhalation rate, soil-gas radon concentration, and assessment of indoor radon/thoron concentration in Siwalik Himalayas of Jammu & Kashmir. Human and Ecological Risk Assessment: An International Journal, 24(8), 2275-2287.

[3] Sahoo, B. K., Sapra, B. K., Kanse, S. D., Gaware, J. J., & Mayya, Y. S. (2013). A new pin-hole discriminated 222Rn/220Rn passive measurement device with single entry face. Radiation Measurements, 58, 52-60.

Primary author(s) : GUEVARA PILLACA, César J. (Pontificia Universidad Católica del Perú)

Co-author(s) : Prof. FLORES CAMARGO, Ricardo (Pontificia universidad católica del Perú); Dr LÓPEZ HERRERA, María Elena (Pontificia Universidad Católica del Perú); Prof. PEREYRA ANAYA, Patrizia (Pontificia Universidad Católica del Perú); Dr SAJO-BOHUS, Laszlo (Universidad Simón Bolívar); Dr PALACIOS FERNÁNDEZ, Daniel (Pontificia Universidad Católica del Perú)

Presenter(s) : GUEVARA PILLACA, César J. (Pontificia Universidad Católica del Perú)

Session Classification : Poster session

Track Classification : Nuclear and Particles