**An annual dataset of atmospheric 7Be and 210Pb measurements in air concentration**

Manjola Shyti1, Hermes Plaku2, Erjon Spahiu3

1Department of Radiometry and Radiochemistry, Institute of Applied Nuclear Physics, University of Tirana, Albania

2Office of Radiation Protection, Radiation Protection Commission, Institute of Public Health, Albania

3Department of Physics, Faculty of Natural Sciences, University of Tirana, Albania

Corresponding author: [manjola.shyti@unitir.edu.al](mailto:manjola.shyti@unitir.edu.al)

7Be and 210Pb air concentrations were measured by gamma spectrometer with a High Purity Germanium detector (HPGe). The data obtained on activity concentration for both radionuclides provide key information on the origins and movements of air masses. A routine air radioactivity monitoring has started since 2021 in a typical aerosol sampling station, ASS -500, located at the Institute of Applied Nuclear Physics in Tirana, Albania. For this paper, the activity concentration of 7Be and 210Pb in ground level air during last year, from January 2024 to December 2024, was considered. We are under working with data processing to see the variation of radionuclides during these five years. The cylinder geometry efficiency curve generated by Canberra’s Laboratory Sourceless Calibration Software (LabSOCS) was used to analyze the air filters. The obtained results show the activity concentrations of cosmogenic 7Be ranged from 1.19 to 5.95 mBq m–3 with a maximum in the summer period. The activity concentrations for 210Pb were in the range of 0.34 to 1.93 mBq m–3. The obtained results in the determination of activity concentrations are comparable with those reported by other investigators and show seasonal variation for 7Be and 210Pb.

**Keywords:** Cosmogenic radionuclides, air filter, HPGe gamma-ray spectrometry