Long term monitoring of Bratislava aerosol radioactivity.

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Variations of cosmogenic (^{7}Be), primordial (^{40}K), radiogenic (^{210}Pb) and anthropogenic (^{137}Cs) radionuclides in Bratislava air studied during 2001–2024 using a weekly sampling and HPGe gamma-spectrometry are presented. A new sampling device (Senya Snow White), recently installed in our meteorological station, was tested and compared with the old sampling system. While ^{7}Be variations were associated with transport of air masses from the lower stratosphere to the ground level air, an inverse trend was observed for ^{210}Pb variations due to infiltration of radon from the soil. The ^{137}Cs activity concentrations (excluding the Chernobyl and Fukushima accidents periods) were decreasing with half-life of 1.9 years, however, during recent years they were almost constant. The increased atmospheric ^{40}K levels were due to soil resuspension and radionuclide transport by winds.