



Contribution ID: 148

Type: Poster

Vertical migration of ^{137}Cs in the undisturbed soil profiles in the basin of Pčinja River, southeastern Serbia

Tuesday, 13 May 2014 17:15 (1h 30m)

The ^{137}Cs activity concentrations in six undisturbed soil profiles collected during 2013 in the basin of Pčinja River, southeastern Serbia, were determined gamma-ray spectrometrically. Soil samples were collected at 5 cm intervals up to 50 cm depth at each location. The value of ^{137}Cs activity concentration when each soil layers of all soil profiles considered equal, ranged from 0.29 to 70.9 Bq kg⁻¹, with a mean value of 10.7 Bq kg⁻¹. Vertical migration of ^{137}Cs activity concentration was shown by unique profile which represents calculated average value based on the measured values of ^{137}Cs activity concentration for all six soil profiles by layers, in order to obtain general behavior of ^{137}Cs in soil in the basin of Pčinja River. It was noted that ^{137}Cs activity concentration decreased with soil depth up to 40 cm and then slightly increased down the profile, which could be consequence of different mechanical, mineralogical and chemical composition of soil layers in the analyzed soil profiles. The highest amount of total ^{137}Cs in the soil (25%) was found in the first soil layer (0-5 cm), while the lowest one (2.46%) was found in the eighth soil layer (35-40 cm). Based on the results for the unique profile 74.3% of the total ^{137}Cs in the soil was found in the first four soil layers (from 0 to 20 cm) and only 25.7% was found in the last six soil layers (from 20 to 50 cm), which indicates the slow migration of ^{137}Cs in the deeper soil layers.

Primary author: Ms PETROVIĆ, Jelena (Institute for the Application of Nuclear Energy, University of Belgrade, Serbia)

Co-authors: Mr ĐORDEVIĆ, Milan (University of Niš, Faculty of Science and Mathematics, Department of Geography, Niš, Serbia); Ms ČUJIĆ, Mirjana (Institute for the Application of Nuclear Energy, University of Belgrade, Serbia); Mr ĐOKIĆ, Mrđan (University of Niš, Faculty of Science and Mathematics, Department of Geography, Niš, Serbia); Mr DRAGOVIĆ, Ranko (University of Niš, Faculty of Science and Mathematics, Department of Geography, Niš, Serbia); Ms DRAGOVIĆ, Snežana (Institute of Nuclear Sciences Vinča, University of Belgrade Belgrade, Serbia)

Presenter: Ms PETROVIĆ, Jelena (Institute for the Application of Nuclear Energy, University of Belgrade, Serbia)

Session Classification: Poster Session - Radionuclides in the Environment, Radioecology

Track Classification: Radionuclides in the Environment, Radioecology