[EJ] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-AG Applied Geosciences

[M-AG33]Dynamics of radionuclides emitted from Fukuchima Dai-ichi Nuclear Power Plant in the environment

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Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

The Great East Japan Earthquake caused the severe accident in TEPCO Fukushima dai-ichi nuclear power plant (FDNPP), leading to emission of huge amount of radionuclides to the environment. They have been transported and diffused by atmospheric motion, depositing them to soil and vegetation. Deposited radionuclides are dynamically shifted in the earth environment; atmosphere, soil, inland water, ocean, and ecosystem. To understand this dynamic shift in the environment and for the long-term prediction of the disaster by the radionuclides, investigation and discussion based on not only the earth sciences including ecology but also on the radiochemistry and other related sciences.
In this session, various efforts to understand the dynamic behavior of radionuclides emitted from FDNPP accident in the earth system as well as to predict their influences on the environment. It is expected that this session will offer a good opportunity to discuss radionuclides in the earth environment from wide aspect and to exchange information in various research fields.

[MAG33-P05]Numerical study of transport pathways of radiocesium from forests to freshwater fish

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Keywords:Fukushima Dai-ichi NPP accident, forest, freshwater fish

Restrictions remain on the sale of some freshwater fish products from Fukushima Prefecture following the accident at the Fukushima Dai-ichi NPP in 2011. It is thought that radiocesium exported from forests is the main source of the radiocesium taken up by freshwater fish, so it is important to clarify the export mechanism to predict future trends. In this study we developed a compartment model to assess catchment-scale migration of radiocesium and evaluated three potential transport pathways from forests to freshwater fish: direct litter fall into rivers, lateral inflow from litter layers in forests, and lateral inflow from underlying forest soils. The results suggest that a combination of direct litter fall and lateral inflow from the litter layer are the main export mechanisms influencing the radiocesium concentration of freshwater fish. It is expected that these results will be useful not only for predicting future trends but also for the assessment of countermeasures designed for reducing the uptake into fish.