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

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

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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-P03] Temporal variations in radiocesium concentration in suspended sediment in Tochigi prefecture after the Fukushima Dai-ichi Nuclear Power Plant accident

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Released radionuclides have been transported to the Japanese terrestrial ecosystems after the Fukushima Dai-ichi Nuclear Power Plant (FDNPP) accident on March 2011. Previous studies have reported the temporal changes in dissolved radiocesium concentrations in Fukushima prefecture from their intensive collecting of various water samples. Their results from June 2011 to July 2013 indicate the two components of exponential decline of ¹³⁷Cs concentration after the FDNPP accident. Our previous works also monitored the radiocesium concentrations in suspended sediments in the same regions. However, the early trend of declined ¹³⁷Cs concentrations is still unclear because the samplings are conducted from 1-3 year after the FDNPP accident. In this study, we report new temporal variations in radiocesium concentrations in suspended sediments in Tochigi prefecture from July 2010 to October 2013. Our samplings are conducted in Mt. Karasawa, Tochigi prefecture, in central Japan. Our results indicate that the first exponential declines are found until around September 2011. In this paper, we report the parameters describing the trend of radiocesium concentrations in the suspended sediments based on the two-component exponential model.