Oral | Symbol M (Multidisciplinary and Interdisciplinary) | M-AG Applied Geosciences

[M-AG38_2PM2]Dynamics of radionuclides emitted from Fukuchima Dai-ichi Nuclear Power Plant in the environment

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Fri. May 2, 2014 4:15 PM - 5:00 PM 501 (5F)

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.

4:45 PM - 5:00 PM

[MAG38-P07_PG]Correlation between Atmospheric Re-entrainment of Radioactive Cs and Meteorological Phenomena Conditions.

3-min talk in an oral session

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Keywords:Radioactive Cs, Atmospheric Re-entrainment, Fukushima Daiichi Nuclear Plant accident, Environmental Radioactivity

1.IntroductionMassive earthquake attacked the eastern Japan on March 11 2011. It triggered the Fukushima Daiichi Nuclear Power Point accident, where large amount of radioactive substances were released. Released radioactive substances are diffused with atmospheric diffusion process, and eventually deposit on the ground surface and vegetation. Deposited radioactive Cs are released again from the ground surface and vegetation. Today's main factor of atmospheric radiation concentration

fluctuation is atmospheric Re-entrainment of radioactive Cs. Re-entrainment mechanism of radioactive Cs is a complex and unprecedented problem. We must consider an interdisciplinary study on deposited radioactive Cs for long-term estimation. We infer that so Cs has a property that is taken in by clay minerals in soil that one of carriers of radioactive Cs is soil particles. The purpose of this study is to make clear how long does atmospheric radiation concentration increase by its re-entrainment, under what meteorological phenomena conditions.2.About sampling Since December 2012, we have been observing atmospheric radiation concentration of radioactive Cs by High-Volume Air Sampler on ground at Namie high school. It collects aerosols by passing through quartz filter. Wind velocity is measured at three altitudes by Three Cup Anemometer..Soil moisture is measured by Moisture Meter of Time Domain reflectometry system.3.Correlation between seasonal re-entrainment of radioactive Cs and meteorological phenomena conditions 4.Investigation of direct transport by back-trajectory analysis