

## Depth Profile of Radioactivity in soil from near the Fukushima Dai-ichi Nuclear Power Plant at five years after the accident

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A large-scale soil sampling project for radionuclides from the accident of Fukushima Daiichi Nuclear Power Plant (FDNPP) was conducted in June 2011 by a research group on the Japan Geoscience Union and the Japan Society of Nuclear and Radiochemical Sciences. Five year later, a new research project was implemented with the objective to know the transition process of radioactivity and the current contamination in 2016. The air dose rate measurement and collection of soil samples for over 105 locations near the FDNPP was conducted [1], and 27 core soil samples were also obtained. In this presentation, we will show the results of depth-profiling of radioactive cesium concentration in the soil samples. The core soil samples were collected using the dedicated soil sampling tool with the depth of 20-30 cm. Each sample was divided into parts with every 2.5 cm depth at the sampling location and filled into polyethylene bag. After drying the soil samples in the room temperature, the soil samples was filled into a U-8 container, and radiocesium was quantified using gamma ray spectrometry with Ge detectors. At least one sample in each sampling location, long-time measurement was conducted to obtain radiocesium ratio (Cs-134/Cs-137). From the depth-profile of the soil, the radioactivities becomes to move deeper side with time passing. On the other hand, the medium concentration of depth was varied with the sampling point. The results were very consistent with the reported values obtained from the soil analysis up to 5 cm depth [1]. [1] K. Ninomiya et. al., Proceedings of the 13th Workshop on Environmental Radioactivity 2017-6 (2017) 31-34.

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