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

*Wataru Sakashita[1], Yuichi Onda[2], Hiroaki Kato[2], Sooyoun Nam[3], Takashi Gomi[3]

1. Faculty of Life and Environmental Sciences, University of Tsukuba, 2. Center for Research in Isotopes and Environmental Dynamics, University of Tsukuba, 3. Tokyo University of Agriculture and Technology

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 ^{137}Cs 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 ^{137}Cs 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.

Keywords: Fukushima Dai-ichi Nuclear Power Plant, Cesium-137, Suspended sediments

