

## Atmospheric resuspension of insoluble Cs radioactive particles found in polluted area in Fukushima

Peng Tang<sup>1</sup>, Kohtaro Hatanaka<sup>1</sup>, \*Kazuyuki Kita<sup>1</sup>, Yukihiro Satou<sup>2</sup>, Takeshi Kinase<sup>3</sup>, Kouji Adachi<sup>3</sup>, Yuji Zaizen<sup>3</sup>, Kazuhiko Ninomiya<sup>4</sup>, SHINOHARA ATSUSHI<sup>4</sup>, Yasuhito Igarashi<sup>5</sup>

1. Faculty of Science, Ibaraki University, 2. JAEA, 3. MRI, 4. Osaka University, 5. Institute for Integrated Radiation and Nuclear Science, Kyoto University

By the TEPCO Fukushima Daiichi Nuclear Power Plant accident, a large amount of radio-caesium (Cs) was emitted into the environment, and was deposited on soil and vegetation. Significant part of the emitted Cs are included in so-called spherical caesium-bearing particles or caesium-rich microparticles (CsMP). Sampling of atmospheric Cs was been conducted at a polluted area in Fukushima since 2012, and Cs bearing particles are tried to detect from the samples taken in 2015, 2016, 2018 and 2019. The particles were detected and isolated from the filter sample with micromanipulator and multi-step autoradiography with an Imaging Plate. Total 15 particles of approximate diameter between 1-2  $\mu\text{m}$  were identified using Scanning Electron Microscope with both backscattered electron. They were characterized by their shape and energy dispersive spectroscopy (EDS) analysis and were categorized as so-called Type A particles. We will discuss seasonal and long-term trend of frequency of atmospheric resuspension of these Cs bearing particles, and will discuss of resuspension mechanisms.

Keywords: spherical caesium-bearing particles, atmospheric resuspension, Fukushima Daiichi Nuclear Power Plant accident