

## Daily changes of $^{90}\text{Sr}/^{137}\text{Cs}$

activity ratio in the atmosphere after the FDNPP accident

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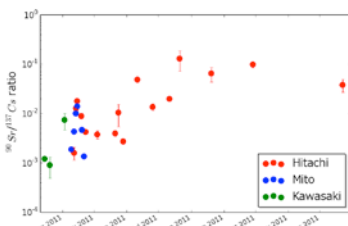
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### Sample and Measurement

On 11 March 2011, the Fukushima Daiichi Nuclear Power Plant (FDNPP) accident occurred and a large amount of radionuclides discharged to the atmosphere. Nuclide activity concentrations in the environmental samples give us better understanding of the FDNPP accident circumstances. Our group has been operating aerosol samplings after the accident. Sampling spots are shown in Fig.1. Cesium-137 activity of aerosol samples was measured by germanium detectors. Strontium-90 in aerosol samples was isolated by a sequential chemical separation method using solid-phase extraction and its activity was measured by a low background liquid scintillation counter.



### Results and Discussion

Strontium-90 concentration was obtained within order of  $10^{-3}$  and  $10^{-5}$  Bq/m<sup>3</sup> and had decreased exponentially to the background level in December, 2011. The daily change of  $^{90}\text{Sr}/^{137}\text{Cs}$  ratios was determined as shown in Fig.2. We found that the ratio rose from  $1.2 \times 10^{-3}$  at March to  $1.3 \times 10^{-1}$  at August in 2011. The  $^{90}\text{Sr}/^{137}\text{Cs}$  ratios were consistent with the simulated radioactivity ratios of the radioactivity discharged from Unit 2 and the Unit 3 reactors.