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Atmospheric activity concentration of radiocesium at Mikamine, Sendai and radioactivity distribution on the collection filters used in the measurement.

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The Fukushima 1 Nuclear Power Plant suffered major damage from the 2011 off the Pacific coast of Tohoku Earthquake and subsequent tsunami on March 11, 2011 and released various radionuclides. Monitoring of environmental radioactivity should provide important information on the behavior of the radionuclides.
To investigate the time variation of atmospheric activity concentration of radiocesium, we have regularly collected aerosol particle samples at Mikamine, Sendai from March 15, 2011 to present. The aerosol particle was collected on a cellulose-glass fiber (Advantec, HE-40T). The radioactivity of radiocesium in the aerosols collected was determined by gamma-ray spectrometry using HP-Ge detectors. The atmospheric activity concentrations of radiocesium were calculated as the ratio between the radiocesium activity in the aerosol particle sample and the total volume of sampling air. As a result, it was found that the maximum activity concentrations of radiocesium were recorded in March 20-21, 2011 and then the atmospheric activity concentrations of radiocesium roughly decreased with a half-life of 10 - 30 d.
In addition, radioactivity distribution on the collection filters used in the measurement was measured by using imaging plate technique. The relation between the monitoring results on the concentration of radiocesium in the air and the imaging plate results are discussed in the presentation.

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