

Global dispersion of radionuclides due to the Fukushima Daiichi Nuclear Power Plant accident

Due to the accident at the TEPCO's Fukushima Daiichi Nuclear Power Plant following the Great East Japan Earthquake of March 11, 2011, huge amount of radioactive materials were released into the environment and dispersed globally. The radionuclide plume resulting from the NPP accident traveled eastward across the northern hemisphere, reaching Siberia in around 12 days through Kamchatka – North America – the North Atlantic Ocean – Europe.

Figure 1 shows the detection of Xe-133 at radionuclide stations in the Northern Hemisphere after the accident. Figure 1 illustrates that the activity concentration level of Xe-133 near each station in the northern hemisphere was almost homogenized by diffusion in early April 2011; thereafter, the concentration level at these stations generally decreased according to the half-life of Xe-133 (about 5.27 days) and returned to normal before the accident around early June. The Xe-133 plume was also detected by some radionuclide stations in the lower latitudes of the southern hemisphere.

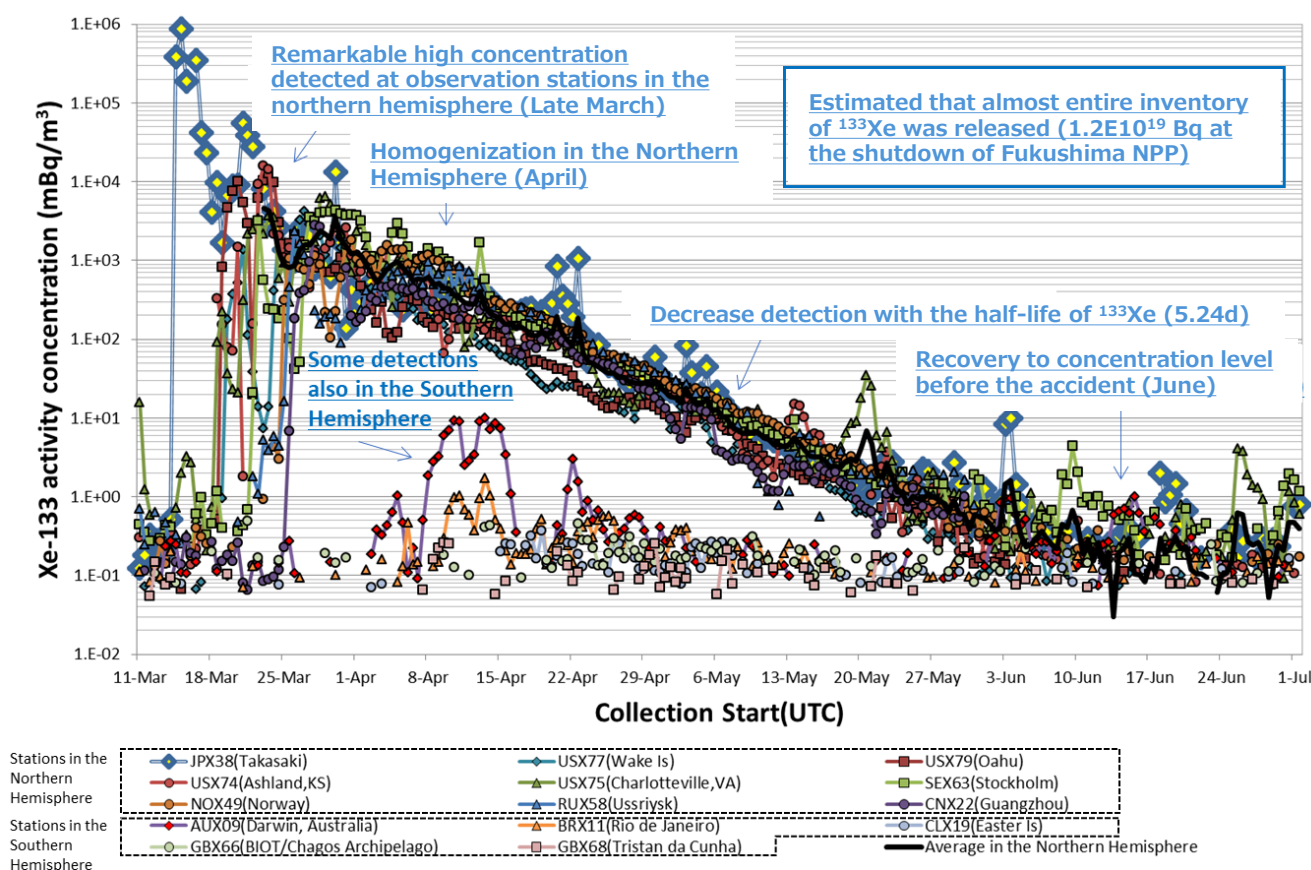


Fig.1 Changes in activity concentrations of Xe-133 at radionuclide monitoring stations after the Fukushima Daiichi Nuclear Power Plant accident