

Cloud Conditions during the Periods of Extremely Reduced Atmospheric Electric Field and Wet Deposition after Radioactive Contamination over Kanto Area

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We have been developing meteorological observation data including various radars and atmospheric electricity over Fukushima and Kanto area in order to understand the transportation and the wet deposition of the radioactive pollutants from the Fukushima-Daiichi nuclear power plant (FNPP). Some evidences of transporting contaminants in the atmosphere were investigated with the filter tapes of the initial stage and the atmospheric electricity at Kakioka station. Then, we need to analysis of the three-dimensional rain drop and fog information to understand the wet deposition processes in addition to the precipitation type and amount, since initial drizzle is difficult to be measured by the tipping bucket-type rain gauges.

We prepared three-dimensional radar reflectivity data of the C-band radar of JMA in every 10 minutes centered at Tokyo and Sendai. We released images of each altitude (1km interval) for 15th - 16th and 21th March, since the precipitation over the two periods are considered to decide the wet-deposition pattern in most part of the Fukushima and Kanto Plain. The vertical structure of the rainfall is almost the same at 4km with the surface and sporadic high precipitation is observed at 6 km height for 15-16th. While, generally precipitation pattern that is similar to the surface is observed at 5km height on 21th.

Further we are comparing the atmospheric electricity at Kakioka which is used for the index of dry deposition (Yamauchi et al. 2012) with the above mentioned the JMA C-band radar and MTSAT-2 images during March 2011. The relationship between radar-captured rainfall and extremely reduced atmospheric electricity is observed at around Kakioka. It is attributed to the fallout of the radioactive contaminants by the drizzle or precipitation around there.

Key words: Fukushima, Radioactive, Cloud, Precipitation, Atmospheric Electricity

References

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