



## **Cloud conditions for low atmospheric electricity during disturbed period after the Fukushima nuclear accident**

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The vertical (downward) component of the atmospheric electric field, or potential gradient (PG) under cloud generally reflects the electric charge distribution in the cloud. The PG data at Kakioka, 150 km southwest of the Fukushima Dai-ichi Nuclear Power Plant (FNPP1) suggested that this relation can be modified when the radioactive dust was floating in the air, and the exact relation between the weather and this modification could lead to new insight in plasma physics in the wet atmosphere. Unfortunately the detailed weather data was not available above Kakioka (only the precipitation data was available). Therefore, estimation of the cloud condition during March 2011 was strongly needed.

We have developed various meteorological information links (<http://www.chikyu.ac.jp/akiyo/firis/>) and original radar and precipitation data will be released from the page. Here we present various radar images that we have prepared for March 2011. We prepared three-dimensional radar reflectivity of the C-band radar of JMA in every 10 minutes over all Kanto Plain centered at Tokyo and Fukushima prefecture centered at Sendai. We have released images of each altitude (1km interval) for 15th - 16th and 21st March (<http://sc-web.nict.go.jp/fukushima/>). 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 21st.

On the other hand, an X-band radar centered at Fukushima university is also used to know more localized raindrop patterns at zenith angle of 4 degree. We prepared 10-minutes/120m mesh precipitation patterns for March 15th, 16th, 17th, 18th, 20th, 21st, 22th and 23th. Quantitative estimate is difficult from this X-band radar, but localized structure, especially for the rain-band along Nakadori (middle valley in Fukushima prefecture), that is considered to determine the highly contaminated zone, is observed with only this X-band radar in the mid-night (JST) of 15th. We will show the movie of how precipitation systems were moved at the meeting.