Descending reflectivity core analysis by Ku-band radar

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In order to observe extreme weather such as localized heavy rainfall, tornado etc., we installed a Ku-band radar in Musashino-shi, Tokyo in 2011. Since the radar can create a 3D volume scan per minute, we expect that the data observed by the radar will contribute to understanding mechanisms of such phenomena.

In our research, we defined a cell as an area whose reflectivity is ≥ 25dBZ, and a core as a reflectivity peak in the cell. The procedures of the cell/core detection are as follows: 1) conversion from rθ data to xyz data, 2) cell detection by binarization and labeling, and 3) core detection by method of steepest descent(ascent).

In this presentation, results of an automatic cell/core detection algorithm will be shown.

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