

Refractivity distribution observed by an operational Doppler Radar

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Because low-level convergence of water vapor generates the convections, if the horizontal distribution of low-level water vapor can be observed, the accuracy of local heavy rainfall forecasts will be improved. Radio waves transmitted from radars and reflected off fixed structures are delayed by water vapor in the atmosphere. If the delay can be obtained, we can calculate the refractivity which is a function of temperature and water vapor. Because many Doppler radars have been deployed by JMA in Japan, this technique is expected to improve the forecast accuracy of thunderstorms all over Japan. In this presentation, the estimation method of the refractivity will be explained, and the temporal variations of refractivity fields, obtained from IQ data from Tokyo operational radar, will be presented.

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