

# **Evaluation of rain microphysics in NICAM using Joint simulator and a polarimetric radar**

Woosub Roh<sup>1</sup>, Masaki Satoh<sup>1</sup>, Tempei Hashino<sup>2</sup>

(<sup>1</sup>AORI, the Univ. of Tokyo, <sup>2</sup>Kouchi Tech. Univ.)

It is important to evaluate and improve the cloud properties in global non-hydrostatic models like a Nonhydrostatic ICosahedral Atmospheric Model (NICAM, Satoh et al. 2014) using observation data. There are intensive observation stations over the Kanto region in Japan. The ULTIMATE (ULtra sIte for Measuring Atmosphere of Tokyo metropolitan Environment) is proposed to verify and improve high-resolution numerical simulations based on these observation data.

The Polarimetric radars are located in Haneda and Narita airports with 5.3 GHz wavelength. Polarimetric radar can observe the precipitation hydrometeors and retrieve the hydrometeor identification based on polarimetric variables. In this study, we used the Joint simulator, which is developed for The EarthCARE satellite. The POLArimetric Radar Retrieval and Instrument Simulator (POLARRIS, Matsui et. al. 2019) was implemented in the Joint simulator. We introduced the preliminary results of NICAM using Joint simulator and a polarimetric radar last year.

This year, we introduce our evaluation method and results for rain microphysics using polarimetric radars and discuss how to improve rain microphysics using a polarimetric radar.