



Simulation of ice particle shape effects using NTU multi-moment microphysics scheme

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Ice crystal shape effect (ICSE) on cloud microphysical processes remains an unresolved issue in cloud modeling. This study incorporated a newly developed three-moment modal parameterization with shape representation for pristine ice crystal and snow aggregates into the WRF model to investigate ICSE. This NTU-v2 scheme allows gradual adaptation of ice crystal habits under varying environmental conditions and thus keeps previous memory of shape. Furthermore, density variations are considered for pristine cloud ice, snow aggregate, and rimed ice (graupel). Shape and density variations are taken into account in calculating the particle fall speed and radar reflectivity. This talk presents a C3VP case to demonstrate the sensitivity of ICSE, as well as a mid-latitude cold front case during the DIAMET campaign for further comparison with aircraft observations. Both cases showed strong influence of ICSE on cloud structure and precipitation. In addition, the effect of particle shape on radar reflectivity calculation is also demonstrated.

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***Tuesday, 26 June 2018, 10:00 AM**

***Please note special day and time**

Refreshments 9:45 AM

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