



Heavy Rainfall Mechanism over US and East Asia: Numerical Modeling Perspectives

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This talk presents the uniqueness in mechanisms causing heavy rainfall in East Asia, as compared to studies over geographically different regions such as the Great Plains in United States. Early mesoscale modeling studies before 1990s over Korea and US are reviewed, focusing on the model's ability to reproduce heavy rainfall. In early 2000s, as the reanalysis data is available, a long-lasting argument on considerably different sensitivities to precipitation physics algorithms in both regions was able to be clarified, along with the analyses of unique synoptic scale features causing heavy rainfall over East Asia. In early 2010s, uniqueness in heavy rainfall system in terms of internal structure was visualized by analyzing satellite observations. Observational evidence with dominant warm-type rain over Korea, as compared to conventional cold-type rain in US, rectifies speculations that have been experienced in modeling communities since mid-1980s. By the virtues of partitioning precipitation into two portions of subgrid scale due to cumulus parameterization scheme and grid scale due to microphysics scheme in numerical models, changes in heavy rainfall mechanisms under global warming are to be addressed.

Thursday, 6 July 2023, 2:00pm

Refreshments 1:45pm

Please also join colleagues for refreshments and informal discussion after the seminar until 3:30pm

NCAR-Foothills Laboratory, 3450 Mitchell Lane
FL2-1022, Large Auditorium

Seminar will also be live webcast

<https://operations.ucar.edu/live-mmm>

Participants may ask questions during the seminar via Slido.