
MMM SEMINAR NCAR

Improvements of Cloud Microphysics Parameterizations and their Application

Kyo-Sun Sunny Lim

*Climate Physics Educational Development
Atmospheric Sciences & Global Change Division
Pacific Northwest National Laboratory
Richland, WA*

In this presentation, we review how the cloud microphysics processes are represented in a different bulk-type method and suggest a potential direction for future improvement along with simulated convection events. First, the importance of the representation of hydrometeor size distribution and its implication are discussed. Second, the sensitivity of the simulated cloud fields to different treatments of the cold-rain process is examined. Finally, through the incorporation of a bulk-type two-moment cloud microphysics parameterization into a cumulus scheme, we investigate the effects of a cloud microphysics parameterization for convective clouds and aerosols on monsoon precipitation in regional climate model frameworks. Our result suggests that an increase in detrained cloud water and ice mass improves the overall simulation of the East Asian summer monsoon and an increased loading of aerosols leads to a decrease in the total precipitation with suppressed convection.

*This seminar will be recorded and available via webcast at:
<http://www.fin.ucar.edu/it/mms/fl-live.htm>*

Thursday, 8 May 2014, 3:30 PM
Refreshments 3:15 PM
NCAR-Foothills Laboratory
3450 Mitchell Lane
Bldg 2 Main Seminar Room 1022