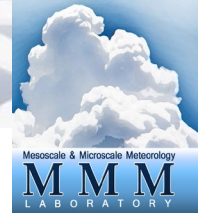


MMM SEMINAR SERIES



Understanding deep convection initiation as modulated by cloud entrainment and dilution

Hugh Morrison
NSF NCAR/MMM

Many factors influencing entrainment-driven dilution have been identified in past studies. However, there is limited consensus on how the interplay of these factors influences cloud growth and deep convection initiation (DCI). In this study, high-resolution (60 m grid spacing) large-eddy simulations are examined to quantify cumulus cloud dilution and how it influences DCI in various environments. The model setup is simplified to isolate key factors while allowing realistic initiation of cumulus clouds rooted in a turbulent planetary boundary layer (PBL). Three environmental factors are systematically varied across a large set of cases (24 total), with all other parameters held fixed. These factors are: 1) PBL height, 2) free tropospheric relative humidity, and 3) free tropospheric lapse rate... [Link to Full Abstract](#)

Thursday, 23 April 2026, 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 Seminar

Seminar will also be live webcast

<https://sundog.ucar.edu/public/page/MMM>

Participants may ask questions during the seminar via Slido.



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