

MMM SEMINAR SERIES



A Multiscale Investigation of the 26-27 April 2011 Tornado Outbreak

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One of the most prolific tornado outbreaks ever documented occurred on 26–27 April 2011 and comprised three successive episodes of tornadic convection that primarily impacted the southeastern United States, including two quasi-linear convective systems that preceded the notorious outbreak of long-track, violent tornadoes spawned by numerous supercells over the warm sector during the afternoon and evening of 27 April.

In this presentation, I will discuss findings from my previously published work on this outbreak, including the chronology and environmental evolution during the three convective episodes and the movement of a cold front aloft (CFA) into the Southeast prior to the onset of the afternoon supercell outbreak. Furthermore, I will use convection-permitting ensemble simulations to demonstrate the dynamical significance of the interaction between the CFA and the prefrontal moist layer and how this interaction led to 1) rapid mesoscale destabilization over the Southeast during the morning of 27 April and 2) unique thermodynamic profiles that supported the formation of mesoscale cloud bands and ultimately deep convection initiation over the warm sector. Finally, I will discuss ongoing efforts to further investigate this evolution in an idealized framework using CM1.

Thursday, 6 April 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.