
MMM SEMINAR NCAR

A Butterfly Flaps its Wings in Texas and Tornadoes are NOT Produced in Oklahoma

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This presentation documents features that led to major forecast errors on the 12 - 24 h-time scale in both the nature and location of severe weather in the Southern Plains on 30 May 2012. Evidence is presented that the low predictability of the severe weather events was the result of the following: (1) dry air that originated to the rear of an outflow boundary in northeast Texas earlier in the morning and which was advected in a narrow tongue northwestward into western Oklahoma, inhibiting convective initiation; (2) the development of a cyclone along the dryline in West Texas, to the east of which several supercells, some tornadic, formed; (3) the upscale development of the supercells into a mesoscale convective system (MCS) in northwestern Texas at nightfall; and (4) the inhibition of convective storms that had formed along a cold front in southwest Kansas and were propagating into northwestern Oklahoma, as they encountered dry air associated with subsidence underneath the stratiform-precipitation region of the rear portion of the MCS. A meridionally oriented swath of high winds (10 m s^{-1} to 30 m s^{-1}) in clear air, in between the two areas of convection, was observed. This swath of high winds was associated with bores triggered at night by the convective storms approaching from north, as they collapsed, producing a gust front that propagated through stable, low-level air. This case study illustrates how the predictability of severe weather in a region can be extremely sensitive to the details of where nearby convective storms form and how they evolve.

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

Thursday, 20 March 2014, 3:30 PM
Refreshments 3:15 PM
NCAR-Foothills Laboratory
3450 Mitchell Lane
Bldg 2 Main Auditorium, Room 1022