



Climate influences on tropical cyclones, and on tornadoes: any commonalities?

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Although the physics of tornadoes and tropical cyclones (TCs) are almost entirely different, there are many commonalities in the research problems that arise when studying how each is related to the large-scale climate. Observational records are relatively short, sparse and troubled by changes in observing practices over time; standard climate models don't resolve the storms well (not at all, in the case of tornadoes); we lack physical theories for key aspects of both problems; and the research communities with the most specialist knowledge of the storms tend to have closer ties to short-term operational forecasting than to climate research. In the face of these difficulties, some of the same methods for combining statistical and dynamical information can be used to gain insight into both problems. This talk will focus on what the TC community calls "genesis indices", which to the tornado community is the "ingredients approach". The results will highlight the role of free-tropospheric saturation deficit in controlling the TC frequency reductions under global warming simulated in a global high-resolution model, and show more clearly than previous studies some ability, with currently available tools, to forecast tornado activity on subseasonal to seasonal time scales over the United States.

This seminar will be webcast live at:

<http://www.fln.ucar.edu/it/mms/fl-live.htm>

Recorded seminar link can be viewed here:

<https://www.mmm.ucar.edu/events/seminars>

Thursday, 21 July 2016, 3:30 PM

Refreshments 3:15 PM

NCAR-Foothills Laboratory

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