

The RAL Seminar Series



NCAR

Tornadic Supercell Analysis from Oklahoma Mesonet Observations: A Spatiotemporal Relational Data Mining Approach

by

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**Foothills Lab Building 2, Auditorium Room 1001
10:00 a.m.**

Determining the tornadic potential of supercell thunderstorms has been a major challenge for meteorologists due to the complex dynamics of storms and the sparseness of observations within storms. This seminar presents a method utilizing complex data mining algorithms to distinguish tornadic and non-tornadic supercells in a ten-year database of supercell tracks in Oklahoma with Oklahoma Mesonet observations. The Spatiotemporal Relational Random Forest (SRRF) algorithm, which is used for this project, has the unique ability to analyze 2- and 3-dimensional temporally-varying data fields directly. This feature makes the algorithm well-suited for analysis of all kinds of weather phenomena, including thunderstorms. The seminar will feature a detailed explanation of the SRRF and its methods of analysis as well as the latest results regarding algorithm performance and variable importance. Applications of the SRRF algorithm to other domains will also be discussed.