



THE UNIVERSITY OF  
**CHICAGO**

Department of Statistics

**SECOND YEAR PHD MINI SEMINARS**

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**On Characterizing the Joint Behavior of Temperature  
and Dew Point**

**THURSDAY, May 9, 2013, at 4:00 PM**

110 Eckhart Hall, 5734 S. University Avenue

**ABSTRACT**

The ARM Southern Great Plains site provides a rich source of data on surface meteorological processes at very fine time scales. I discuss some challenges that arise when considering the bivariate behavior of two such meteorological quantities—temperature and dew point—at a single site over time, with the goal of providing a model that describes these processes. Two facts pose substantial obstacles in modeling. Since temperature is bounded below by dew point, a simple bivariate Gaussian process model will not suffice. The problem is further complicated because the processes are non-stationary. I describe the nature of this non-stationarity, as well as some other features of the data, and discuss what features should be taken into account when attempting to specify an adequate model of these processes.

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