

Statistical Modeling for Spatio-Temporal Soil Moisture Data in Oklahoma

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We focus on the state-level soil moisture data from Mesonet. There are two aims in our analyses: (1). Understanding temporal patterns of soil moisture in both a short term period and a long term period. We expect to establish a descriptive statistical model for changes over time; (2). Understanding spatial variations of soil moisture at the state-level. We expect to use other variables, such as weather and land, which may also vary in space and time, to explain the variation of soil moisture. The goal is to predict soil moisture at those locations where data are not available in the entire state, i.e. a statistical mapping. Combining the knowledge of (1) and (2) will help us to establish a predictive model for mappings over time.