Comparing Small Scale Spatial Relationships of Surface Soil Water. (S06-timlin153100-Poster)

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Abstract:

A study investigating the relationship between the spatial distribution of corn yield and the distribution of surface soil moisture was conducted during the 2000 and 2002 growing seasons in Beltsville, Md. The objective of this study was to determine how the relationship among sampling densities and the spatial correlation of yield and surface soil moisture changed between a drought year and a wet year. Several factors including sampling densities and spatial neighbor matrix setups were evaluated to determine the extent of the spatial correlation. For the 2000 season, 4 - 25m2 plots were setup with ~100 soil moisture sampling points. For the 2002 season, two 19 m plots were setup with 290 sampling points. Weather data, yield monitor data, elevation data, and surface soil cores were collected on each of the plots. The results of the study found that relationships between sampling points exhibited strong spatial dependence under wet conditions at a distance of 6m. The spatial relationship between points diminished as the soil dried out. The spatial relationship was found to be much stronger during the wet year (2000) than in the dry year (2002).

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