Spatial Modeling Techniques for Soil Carbon Accounting. (S05-slater155247-Oral)

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Abstract:

Soil carbon is significant to the global carbon cycle and is a critical element in soil quality. Inventory of soil carbon can provide a baseline for assessment of land management effects. Traditionally, inventory has been based on attribution of mean carbon values to soil mapping units from County to regional scales. Major errors may occur due to variability in carbon between polygons of the same mapping unit, and due to temporal change in carbon associated with land management. Continuous, quantitative spatial models provide an alternative means of inventory. A variety of techniques for building spatial models including geostatistical and regression methods (correlation of soil carbon with spatial data such as terrain and land management) are presented. Environmental correlation models for soil carbon in Ohio represent a variety of scales from the sub-watershed level through county and regional scales. Remaining challenges to be addressed include the limited availability of terrain data at appropriate resolution, and rapid remote techniques for assessing land management and land use change.

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