Space-Time Modeling of Agricultural Landscape Variability Using AgSimGIS

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Abstract
Most agricultural water quality models are based on lumped parameterizations of spatial processes. The AgSimGIS water quality tool has been developed to predict space-time planning scenarios across spatially variable agricultural landscapes. The tool runs under the ArcGIS 8.3 environment, and consists of a multi-functional system for simulation modeling and spatial data storage, analysis, and display. AgSimGIS offers a spatial framework for integrating a complex, agricultural system water quality model (modified USDA-ARS RZWQM) with interaction between simulated land areas via overland runoff and runon. AgSimGIS also provides the increased interface sophistication necessary for distributed hydrologic modeling. AgSimGIS development history, including an overview of the major GIS and simulation modeling components, will be presented.