

Selected Technical Facets of the KINEROS2 Watershed Model

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Abstract

KINEROS (KINematic runoff and EROS model) originated in the 1970's as a distributed event-based model abstracting the watershed as a cascade of overland flow model elements which flow into trapezoidal channel model elements. It was one of the first widely available watershed models that interactively coupled a finite difference approximation of the of the kinematic overland flow equations to the Smith-Parlange infiltration model. Development and improvement of KINEROS has continued from the '70's on a variety of projects for a range of purposes. This has resulted in development of a suite of KINEROS-based modeling tools that can be executed from a single shell. The tools range from the event-based KINEROS2 flash-flood forecasting tool to the continuous K2-O2 (KINEROS2-Opus2) biogeochemistry tool. The KINEROS2 flash flood forecasting tool is being tested with the National Weather Service in the desert southwest and in Central New York State. KINEROS2 assimilates the NWS Digital Hybrid Reflectivity (DHR) radar product in near-real time and can simultaneously run ensembles with multiple radar-reflectivity relationships. The flash flood modeling tool and application will be discussed in more detail in an oral presentation by Michael Schaffner (NWS, Binghamton, NY). This poster will focus on selected technical aspects of the KINEROS2 model directly related to flash flood forecasting. These include interactive routing and infiltration, representation of suburban/urban watersheds, and new capabilities being incorporated to make the model more general including snowmelt and accumulation and lateral subsurface flow.