

Improved Graphical Representation of CASC2D-TREX Results

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Abstract. The hydrologic model CASC2D originally began with a two-dimensional overland flow routing algorithm developed and written by P.Y. Julien at Colorado State University in 1988. Results from the model applications have historically been presented in two-dimensional (2-d) color graphics and several 2-d film loops. Displayed parameters included rainfall precipitation, infiltration rates, flow depth, multi-phase sediment and metal concentrations and fluxes, and erosion, transport and deposition of sediment and metals. Recently, significant improvements have been made in the graphical display of input and result data from the model. Data may now be displayed in three dimensions to provide better visualization of surface processes including: runoff from urban and forested hillslopes, flow convergence and divergence from surface runoff and detention storage. Flow interaction between the main channel and the floodplain is also well illustrated with three dimensional representation. The current capabilities for graphical display of results are demonstrated using the 2004 application of CASC2D by Velleux at California Gulch near Leadville, Colorado.