

## **WATERSHED SIMULATION WITH AN ENHANCED DISTRIBUTED MODEL**

**Yong G. Lai, Hydraulic Engineer, Bureau of Reclamation, Denver, Colorado,  
ylai@do.usbr.gov**

**Abstract:** Distributed watershed modeling is gaining popularity in recent years. Popular models in the US include CASC2D and WEPP, among others. These models have been used successfully for many projects with various purposes. Despite the success, much improvement is needed. This paper presents results of an enhanced distributed model, GSTAR-W, that builds upon features of CASC2D but made a number of significant improvements. The objectives and new features of the model are discussed first, and the mathematical and numerical formulations are then presented. A number of verification and validation cases are finally shown to illustrate issues of model performance, accuracy, and efficiency.