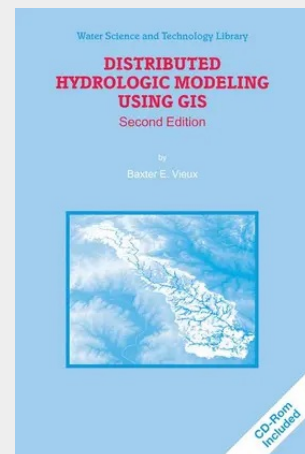


Distributed Hydrologic Modeling Using GIS

This monograph sets forth a unified approach and principles for modeling hydrologic processes distributed in space and time using geographic information systems (GIS). The focus of this Second Edition is on the principles of how to implement a distributed model using geospatial data to simulate hydrologic processes. Once embarked on fully distributed representations of hydrologic processes, conservation laws form the basis for modeling, and spatial data management becomes necessary. A physics-based approach involves the laws that govern the complexities of all the paths that water travels, from precipitation falling over a river basin to the flow in the river. Examples are provided that illustrate how to represent a watershed with spatially distributed data along with the many pitfalls inherent in such an undertaking. Since the First Edition, software development and applications have created a richer set of examples, and a deeper understanding of how to perform distributed hydrologic analysis and prediction.

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