

**SIMULATION OF CONTAMINANT TRANSPORT. APPLICATION OF
PRINCIPAL DIRECTION TECHNIQUE IN A SHALLOW AQUIFER**

P. ANASTASIADIS

*Dr. Civil Engineering, Technological Institute of Serres, Terma Magnisias, Serres,
Greece*

ABSTRACT

The principal direction technique for the simulation of advective-dispersive transport is presented. The technique provides the accuracy, efficiency and flexibility needs to make two dimensional transport simulation practical. The technique is designed for high efficiency in handling the large and detailed grids that are often requires in simulations of natural groundwater systems. The technique combines an alternating direction time stepping scheme with curvilinear grid system that is everywhere tangential to the advective direction. Criteria for controlling numerical dispersion and accuracy can be applied easily. An application of principal direction method scale contamination transport problem is described.