Journal of Environmental Hydrology

A DYNAMIC SOIL WATER MODEL FOR ENVIRONMENTAL SIMULATION PROBLEMS

Odysseus G. Manoliadis
Department of Geotechnology and Environmental Engineering
Technological Education Institute of West Macedonia, Kozani, Greece

ABSTRACT
A soil water model of one dimensional flow, using the Runge-Kutta Gill algorithm, is described with the aim of forming a flexible general purpose simulation tool. The problem of 慸tiffness?appearing in the traditional finite difference methods approach is discussed, and a numerical algorithm able to overcome it is adopted. The model, based on a flexible numerical approach, is tested with published data. The tests show the model performance to be satisfactory in soil water simulations. The performance of the numerical algorithm is compared with that of a number of alternative numerical methods. The comparison supports the original choice of the algorithm.

CONTACT:

Odysseus G. Manoliadis
Department Of Geotechnology and Environmental Engineering
Technological Education Institute of West Macedonia
50100 Kozani
Greece

Email: omano@tee.gr

 Return to HydroWeb Homepage