

**FINITE-ELEMENT ANALYSIS OF GROUNDWATER FLOW IN  
MULTI-AQUIFER SYSTEMS, A QUASI THREE-DIMENSIONAL FLOW  
MODEL**

**K.FUJINAWA**

**ABSTRACT**

An integrated model with a one-dimensional finite-element analysis for solving the vertical flow equations in aquitards and a two-dimensional finite-element analysis for solving the horizontal flow equations in aquifers has been developed to analyse quasi three-dimensional groundwater flow. The numerical results are compared to the analytical solution obtained by Neuman and Witherspoon. Except at small values of the dimensionless time, good agreement with the analytical solution is obtained. The advantage of this method lies in the simplification of the calculation procedure and in the reduction of computing time and storage.