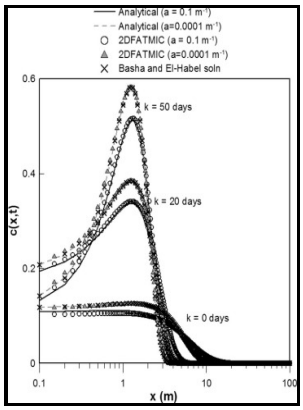
Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow

Dept. of the Interior, U.S. Geological Survey - Numerical Solution of Nonlinear Reaction



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Numerical Solution of Nonlinear Reaction

Transverse dispersion represents an important mixing process for transport of contaminants in groundwater and constitutes an essential prerequisite for geochemical and biodegradation reactions.

Upscaling of solute transport in heterogeneous media with non

The default parameters used in 20 and 23 are listed in Table 2. Two scenarios dealing with contaminant leakage from the aquifer top surface and contaminant migration from a source at the landward boundary are considered. The influence of inclined line sources and sources sitting on top or bottom of the aquifer were not discussed by Park and Zhan 2001.

Analytical solution for one

However, these studies have always been conducted in 1D or 2D, despite the fact that 3D effects are clearly present.

Water Resources Software

A generalized two-dimensional analytical solution for hydrodynamic dispersion in bounded media with the first-type boundary condition at the source. NTF k has been tested on synthetic and real-world site three-dimensional datasets.

Analytical solutions for one

Sagar B 1982 Dispersion in three dimensions: approximate analytical solutions. The complexity partially comes from the uncertainty of contaminant sources, including source shapes and locations. Three-dimensional solutions for solute transport in an infinite medium with mobile and immobile

zones.

Subsurface solute transport with one

We develop a 3D finite-element model and simulate the transport of dichloromethane DCM through a typical GCL composite liner system consisting of a GM, a GCL, an attenuation layer and a thin aquifer. Thirdly, the heat tracer method for estimating water flux is sensitive to the thermal properties of saturated sediments.

Analytical solutions of three

It is shown that both V e and D e are scale-dependent dependent on the length scale of the microscopic heterogeneity, ε , dependent on the Péclet number P e, and on a dimensionless parameter α that represents the effects of microscopic heterogeneity.

Examples Of One Two Three Dimensional Flow

Using the same methodology, we derive the solutions for the point, line, and area sources in a finite-thickness aquifer.

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