



Solute Transport Modelling

By Randolph Rausch

Borntraeger Gebrueder Sep 2005, 2005. Taschenbuch. Book Condition: Neu. 22x17x cm. Neuware - Transport models have become an essential tool to investigate groundwater quality problems. This book presents the fundamental hydraulic, hydrochemical and numerical concepts that are required for the sound and efficient application of solute transport models in groundwater studies. Advection, dispersion and diffusion, which are the main physical transport processes, are first introduced, followed by the derivation of the advection-dispersion equation. A separate chapter is dedicated to multispecies reactive transport modelling, presenting both theory and simulation examples. Special methods used to simulate transport in fractured geological material are also presented. The authors, all of them groundwater modelling professionals, focus on the detailed presentation of numerical methods commonly used in transport models, to provide practitioners with a sound theoretical basis for transport model applications. Grid-based methods are presented, including explicit and implicit finite differences, finite elements and finite volume methods. Particle tracking techniques are also covered, among them the method of characteristics and the random-walk method. This professional text addresses academics, scientists, engineers, hydrologists and hydrogeologists interested in the application of transport models in hydrogeology, geoecology, hydrology, geography, environmental engineering, hydraulic engineering and water economics. 205 pp....



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