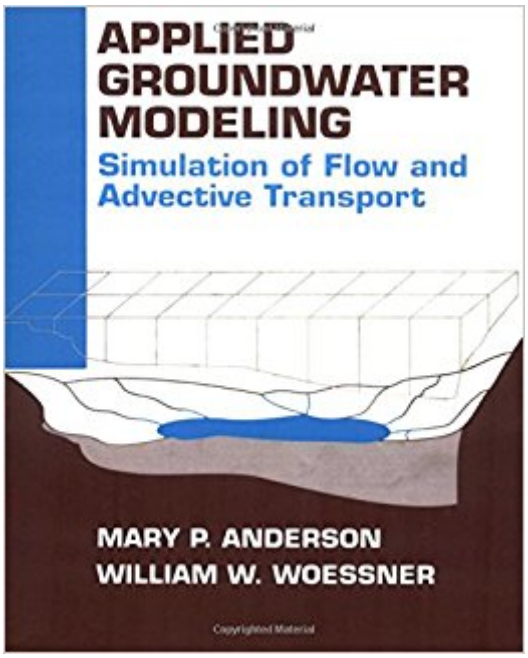
Applied Groundwater Modeling: Simulation Of Flow And Advective Transport



Synopsis

Creating numerical groundwater models of field problems requires careful attention to describing the problem domain, selecting boundary conditions, assigning model parameters, and calibrating the model. This unique text describes the science and art of applying numerical models of groundwater flow and advective transport of solutes.Explains how to formulate a conceptual model of a system and how to translate it into a numerical modelIncludes the application of modeling principles with special attention to the finite difference flow codes PLASM and MODFLOW, and the finite-element code AQUIFEM-1Covers model calibration, verification, and validationDiscusses pathline analysis for tracking contaminants with reference to newly developed particle tracking codesMakes extensive use of case studies and problems

Book Information

Hardcover: 381 pages

Publisher: Academic Press; 1 edition (December 25, 1991)

Language: English

ISBN-10: 0120594854

ISBN-13: 978-0120594856

Product Dimensions: 1 x 7.8 x 9.5 inches

Shipping Weight: 2.2 pounds

Average Customer Review: 3.8 out of 5 stars 9 customer reviews

Best Sellers Rank: #1,353,266 in Books (See Top 100 in Books) #72 inÃ Â Books > Engineering & Transportation > Engineering > Civil & Environmental > Environmental > Groundwater & Flood Control #379 inÃ Â Books > Engineering & Transportation > Engineering > Mechanical > Hydraulics #2117 inÃ Â Books > Textbooks > Engineering > Mechanical Engineering

Customer Reviews

"Applied Groundwater Modeling is a good reference for the practitioner performing groundwater modeling. The index is helpful for locating topics of interest, and the literature review and references cited are comprehensive....In summary [this book] partially fills a void that has existed in the field of groundwater modeling." --JOURNAL OF CONTAMINANT HYDROLOGY "This is an excellent opportunity for those who, having the necessary skills, are prepared to take seriously the concept that ground water dynamics can be effectively both represented and resolved in numerical terms." --ESRISAT BULLETIN "The book presents a useful text that guides the engineer and practitioner through all major stages in the complex adventure of modeling groundwater flow and transport

mechanisms in actual field settings. An extensive selection of most recent references helps with understanding of current development in subsurface modeling, while many figures from actual case-study applications bring modeling experience closer to the reader." --BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY "I believe Applied Groundwater Modeling is a major contribution to the field of groundwater hydrology. It is the type of book that will raise the level of expertise of anyone who reads it." --E. Scott Bair, OHIO STATE UNIVERSITY "A very significant contribution that addresses a longtime need among hydrologists and others using groundwater models. It will be kept on the work table and not on the bookshelf. It will establish a standard of quality with which future modeling studies will be preformed and reviewed." --Alan Dutton, UNIVERSITY OF TEXAS AT AUSTIN "Applied Groundwater Modeling will be a commonly used reference for students, academicians, consultants, and regulators. After years of trying to decipher and apply the cryptic methods and arcane notations used by numerical modelers of groundwater flow systems, these seeming mysteries are revealed in an easily understood manner. The terminology, methodologies, and case studies are presented with the eye of a research scientist, the nose of an academic, and the touch of an experienced practitioner. As a result, the reader will be rewarded with the fundamental knowledge needed to use these valuable tools." --E. Scott Bair, OHIO STATE UNIVERSITY

I like it

Very good!

This thing goes into the math all over the place, butt what you really need is a real person telling you how to work this POS program.

good

This book is probably the best ever written on the subject. In other words, the content is really 1st class.However, the print quality is so poor that I wonder how Anderson and Woessner or their ’managers’ did ever even think about letting Elsevier do the print. It looks like something that come out of a fax machine. The figures are difficult to read. Grey-scales in figures have turned into slightly different tones of just black, and sometimes you need the Academic Press print of 1992 to fully understand the figures. The layout of tables that run over two or more pages have been altered to

become inlogic compared to the Academic Press print version. Also the letters of the bulk text lacks reader friendliness. My advise is to look for the book printed by academic press and not by Elsevier.

What I like about this book is the breadth it provides on the art and philosophy of groundwater modelling. It is really about the practice of applying existing codes, there is very little detail about the theory behind the codes. There are numerous examples mostly using FDM (MODFLOW, PLASM) and occasionally FEM codes (AQUIFEM-1), and lots of discussion on things to keep in mind. There are whole chapters on (1) boundary conditions (2) transient models and (3) conceptual models which I thought was great. There is a useful discussion on water balance too. There is very little however on unsaturated flow or solute transport, both of which get only a few pages in the last chapter.

This text outlines the basic principles and problems faced by young groundwater modelers. The comprehensive interpretation of common challenges are handled with reference to real case studies. Basic steady-state groundwater modeling is supplimented with transient examples. It is a great text for any groundwater modeling class at the undergraduate or graduate level.

A great book for explaining the essentials of groundwater modeling including governing equations and statistical evaluation of numeric modeling. I just wish the publisher could produce a book that the cover didn't fall off within the first couple months of use.

the Characterization of Polymers, Proteins and Nanoparticles Flow and Contaminant Transport in Fractured Rock Applied Groundwater Hydrology & Well Hydraulics Freight Forwarding and Multi Modal Transport Contracts (Maritime and Transport Law Library) ASTNA Patient Transport: Principles and Practice, 4e (Air & Surface Patient Transport: Principles and Practice) ASTNA Patient Transport - E-Book: Principles and Practice (Air & Surface Patient Transport: Principles and Practice) Molecular Gas Dynamics: Theory, Techniques, and Applications (Modeling and Simulation in Science, Engineering and Technology) Advanced Transport Phenomena: Fluid Mechanics and Convective Transport Processes (Cambridge Series in Chemical Engineering) The Transport System and Transport Policy: An Introduction Modeling Behavior in Complex Public Health Systems: Simulation and Games for Action and Evaluation