

# **Groundwater Science, Second Edition**

By Charles R. Fitts



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Groundwater Science, Second Edition? winner of a 2014 Textbook Excellence Award (Texty) from The Text and Academic Authors Association? covers groundwater's role in the hydrologic cycle and in water supply, contamination, and construction issues. It is a valuable resource for students and instructors in the geosciences (with focuses in hydrology, hydrogeology, and environmental science), and as a reference work for professional researchers. This interdisciplinary text weaves important methods and applications from the disciplines of physics, chemistry, mathematics, geology, biology, and environmental science, introducing you to the mathematical modeling and contaminant flow of groundwater.

# New to the Second Edition:

- New chapter on subsurface heat flow and geothermal systems
- Expanded content on well construction and design, surface water hydrology, groundwater/ surface water interaction, slug tests, pumping tests, and mounding analysis.
- Updated discussions of groundwater modeling, calibration, parameter estimation, and uncertainty
- Free software tools for slug test analysis, pumping test analysis, and aquifer modeling
- Lists of key terms and chapter contents at the start of each chapter
- Expanded end-of-chapter problems, including more conceptual questions
- Winner of a 2014 Texty Award from the Text and Academic Authors Association
- Features two-color figures
- Includes homework problems at the end of each chapter and worked examples throughout
- Provides a companion website with videos of field exploration and contaminant migration experiments, PDF files of USGS reports, and data files for homework problems
- Offers PowerPoint slides and solution manual for adopting faculty

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## **Editorial Review**

#### Review

"The 2nd edition of *Groundwater Science* by Charles R. Fitts includes a wealth of new and updated materials both in the book and on the web... Fitts' book is excellently written for use in an introductory groundwater course, particularly at the undergraduate level. Groundwater science has the benefit of an author with an engineering background..." - *Groundwater*, 2013, vol. 51(5), p. 655.

"The 2nd edition of Groundwater Science by Charles R.Fitts includes a wealth of new and updated materials both in the book and on the web...Fitts' book is excellently written for use in an introductory groundwater course, particularly at the undergraduate level." --Groundwater, September-October 2013

Praise for the first edition: "Groundwater Science would serve well as the text for an introductory groundwater course...The graphics are crisp and explanatory. Data sets needed to work some of the problems in the book are available as text files from the book's Web Site...I found these files to be complete and easy to understand. The references are up to date...concise, well-written, and well-illustrated..." --Sean A. McKenna, Sanda National Labs, EOS TRANSACTIONS, July 2003

"Groundwater Science is presented in a clear, logical manner, with attractive, effective typeset, and crisp diagrams...I strongly endorse this book for those entering the world of groundwater science for the first time." --David Sharpe, Geological Survey of Canada Episodes, December 2002

"The writing is clear and accurate without being wordy... The figures, references, and indexing are also well done. The references include both classics and recent papers, with broad coverage...It's not easy to do so many topics well, but Fitts' book succeeds." --Laura Toran, for GROUND WATER, 2003

"Fitts takes a decidedly lean and focused approach to the subject. The figures have a crisp and uncluttered look to them. The writing and presentation is clear and economical. Fitts stresses concepts over formal development, avoiding derivations and mathematics where possible. I found his approach to be very effective, and expect it would appeal to the learning style of most students who need to first establish a simple, concrete foundation, supported by their own intuition, before they can abstract concepts in mathematical expressions...Groundwater Science is a good text for an introductory course in groundwater."

--Roger Beckie, University of British Columbia, for VADOSE ZONE JOURNAL, November 2003

"This text should find a suitable market in ground water science, especially with those instructors who prefer more mathematical or engineering perspectives to the subject. Although the text stresses mathematical modeling and contaminant flow, the overall balance provided by the geological perspective from Chapter 4 makes it a suitable choice for any instructor needing a comprehensive, visually appealing, well organized, and well supported textbook on ground water." --Robert A. Vargo, Department of Earth Science, California University, for the Journal of the American Water Resources Association

# About the Author

Charles R. Fitts is a professor at the University of Southern Maine with research interests in hydrogeology, contaminant migration, and applied mathematics. He earned an MS in engineering geology at Cornell and a PhD in civil engineering at the University of Minnesota. He has consulted for various geotechnical and groundwater companies, and is author of several groundwater modeling software packages: AnAqSim

(analytic aquifer simulator) and TWODAN for groundwater flow, and SOLUTRANS for solute transport.

## **Users Review**

#### From reader reviews:

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Now a day individuals who Living in the era everywhere everything reachable by interact with the internet and the resources within it can be true or not demand people to be aware of each details they get. How many people to be smart in having any information nowadays? Of course the reply is reading a book. Examining a book can help persons out of this uncertainty Information specially this Groundwater Science, Second Edition book as this book offers you rich information and knowledge. Of course the details in this book hundred per cent guarantees there is no doubt in it you probably know this.

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