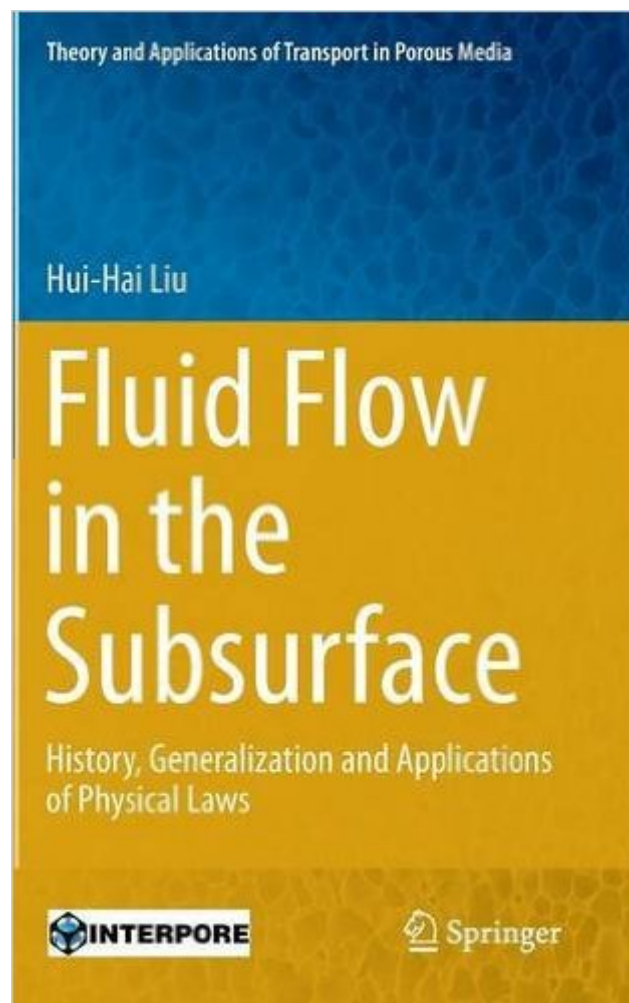


The book was found

# Fluid Flow In The Subsurface: History, Generalization And Applications Of Physical Laws (Theory And Applications Of Transport In Porous Media)



## Synopsis

This book presents a systematic attempt to generalize several fundamental physical laws related to subsurface fluid flow that are important for a number of contemporary applications in the areas of hydrogeology, reservoir engineering and rock mechanics. It also covers the history of discovering these physical laws, their respective scope of validity, and their generalizations or extensions. The physical laws discussed include Darcy's law, Darcy-Buckingham law and Hooke's law. Darcy's law is the fundamental law for subsurface fluid flow. For low-permeability media, it is not always adequate because of the strong fluid-solid interaction. Though the Darcy-Buckingham law is often used for modeling subsurface multiphase flow, it is only valid under the local equilibrium condition. This condition does not hold in many cases, especially when fingering flow occurs. It is well known that subsurface fluid flow is coupled with mechanical deformation of subsurface media; in some applications, this coupling can play a dominant role. The continuum-scale elastic deformation of natural rock, however, does not always follow the traditional form of Hooke's law. The book also presents applications of the proposed generalizations of the physical laws to several important engineering projects.

## Book Information

Series: Theory and Applications of Transport in Porous Media (Book 28)

Hardcover: 230 pages

Publisher: Springer; 1st ed. 2017 edition (September 1, 2016)

Language: English

ISBN-10: 3319434489

ISBN-13: 978-3319434483

Product Dimensions: 6.1 x 0.6 x 9.2 inches

Shipping Weight: 1.2 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #2,055,784 in Books (See Top 100 in Books) #253 in Books > Science & Math > Chemistry > Geochemistry #409 in Books > Engineering & Transportation > Engineering > Civil & Environmental > Hydrology #461 in Books > Science & Math > Earth Sciences > Geophysics

[Download to continue reading...](#)

Fluid Flow in the Subsurface: History, Generalization and Applications of Physical Laws (Theory and Applications of Transport in Porous Media) Modeling Groundwater Flow and Contaminant Transport

(Theory and Applications of Transport in Porous Media) Dynamics of Fluids in Porous Media (Dover Civil and Mechanical Engineering) Mechanics of Groundwater in Porous Media Differential Geometry: Cartan's Generalization of Klein's Erlangen Program (Graduate Texts in Mathematics, Vol. 166) Light Scattering, Size Exclusion Chromatography and Asymmetric Flow Field Flow Fractionation: Powerful Tools for the Characterization of Polymers, Proteins and Nanoparticles Teach'n Beginning Offensive Basketball Drills, Plays, and Games Free Flow Handbook (Series 4 Free Flow books 25) Entrophy Generation Through Heat and Fluid Flow Applied Groundwater Modeling, Second Edition: Simulation of Flow and Advective Transport Freight Forwarding and Multi Modal Transport Contracts (Maritime and Transport Law Library) ASTNA Patient Transport: Principles and Practice (Air & Surface Patient Transport: Principles and Practice) Transport Nursing (CTRN) Review (Certification in Transport Nursing Book 1) 3-D Structural Geology: A Practical Guide to Quantitative Surface and Subsurface Map Interpretation An Introduction to Subsurface Drainage for Pavements Introduction to Applied Geophysics: Exploring the Shallow Subsurface Characterization of Porous Solids and Powders: Surface Area, Pore Size and Density (Particle Technology Series) Daring Adventures in Paint: Find Your Flow, Trust Your Path, and Discover Your Authentic Voice-Techniques for Painting, Sketching, and Mixed Media Bates' Guide to Physical Examination and History-Taking (Bates Guide to Physical Examination and History Taking) Bates' Guide to Physical Examination and History-Taking 11th Edition TestBank: Test Bank with Rationales for the book Bates' Guide to Physical Examination and History-Taking Computational Fluid Mechanics and Heat Transfer, Third Edition (Series in Computational and Physical Processes in Mechanics and Thermal Sciences)

[Dmca](#)