

1. Record Nr.	UNINA9910144135503321
Autore	Pinder George Francis <1942->
Titolo	Essentials of multiphase flow and transport in porous media [[electronic resource] /] / George F. Pinder, William G. Gray
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, c2008
ISBN	1-281-75203-7 9786611752033 0-470-38080-2 0-470-38079-9
Descrizione fisica	1 online resource (273 p.)
Altri autori (Persone)	GrayWilliam G <1948-> (William Guerin)
Disciplina	624.1/513
Soggetti	Porous materials - Fluid dynamics - Mathematical models Multiphase flow - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	ESSENTIALS OF MULTIPHASE FLOW AND TRANSPORT IN POROUS MEDIA; CONTENTS; Preface; Acknowledgments; 1 Setting the Stage; 1.1 Introduction; 1.2 Phases and Porous Media; 1.3 Grain and Pore Size Distributions; 1.4 The Concept of Saturation; 1.5 The Concept of Pressure; 1.6 Surface Tension Considerations; 1.7 Concept of Concentration; 1.8 Summary; 1.9 Exercises; Bibliography; 2 Mass Conservation Equations; 2.1 Introduction; 2.2 Microscale Mass Conservation; 2.3 Integral Forms of Mass Conservation; 2.4 Integral Theorems; 2.4.1 Divergence Theorem; 2.4.2 Transport Theorem 2.5 Point Forms of Mass Conservation2.6 The Macroscale Perspective; 2.6.1 The Representative Elementary Volume; 2.6.2 Global and Local Coordinate Systems; 2.6.3 Macroscopic Variables; 2.6.4 Definitions of Macroscale Quantities; 2.6.5 Summary of Macroscale Quantities; 2.7 The Averaging Theorems; 2.7.1 Spatial Averaging Theorem; 2.7.2 Temporal Averaging Theorem; 2.8 Macroscale Mass Conservation; 2.8.1 Macroscale Point Forms; 2.8.2 Integral Forms; 2.9 Applications; 2.9.1 Integral Analysis; 2.9.2 Point Analysis; 2.10 Summary; 2.11 Exercises; Bibliography; 3 Flow Equations; 3.1 Introduction 3.2 Darcy's Experiments3.3 Fluid Properties; 3.4 Equations of State for

Fluids; 3.4.1 Mass Fraction; 3.4.2 Mass Density and Pressure; 3.4.3 Fluid Viscosity; 3.5 Hydraulic Potential; 3.5.1 Hydrostatic Force and Hydraulic Head; 3.5.2 Derivatives of Hydraulic Head; 3.6 Single-Phase Fluid Flow; 3.6.1 Darcy's Law; 3.6.2 Hydraulic Conductivity and Permeability; 3.6.3 Derivation of Groundwater Flow Equation; 3.6.4 Recapitulation of the Derivation; 3.6.5 Initial and Boundary Conditions; 3.6.6 Two-Dimensional Flow; 3.7 Two-Phase Immiscible Flow; 3.7.1 Derivation of Flow Equations
3.7.2 Observations on the $p(c)$ - $s(w)$ Relationship
3.7.3 Formulas for the $p(c)$ - $s(w)$ Relationship; 3.7.4 Observations of the $k()$ (rel)- $s(w)$ Relationship; 3.7.5 Formulas for the $k()$ (rel)- $s(w)$ Relation; 3.7.6 Special Cases of Multiphase Flow; 3.8 The Buckley-Leverett Analysis; 3.8.1 Fractional Flow; 3.8.2 Derivation of the Buckley-Leverett Equation; 3.8.3 Solution of the Buckley-Leverett Equation; 3.9 Summary; 3.10 Exercises; Bibliography; 4 Mass Transport Equations; 4.1 Introduction; 4.2 Velocity in the Species Transport Equations; 4.2.1 Direct Approach; 4.2.2 Rigorous Approach
4.2.3 Distribution Approach
4.2.4 Summary; 4.3 Closure Relations for the Dispersion Vector; 4.4 Chemical Reaction Rates; 4.5 Interphase Transfer Terms; 4.5.1 Kinetic Formulation; 4.5.2 Equilibrium Formulation; 4.5.3 Summary: Kinetic vs. Equilibrium Formulations; 4.6 Initial and Boundary Conditions; 4.7 Conclusion; 4.8 Exercises; Bibliography; 5 Simulation; 5.1 1-D Simulation of Air-Water Flow; 5.1.1 Drainage in a Homogeneous Soil; 5.1.2 Drainage in a Heterogeneous Soil; 5.1.3 Imbibition in Homogeneous Soil; 5.2 1-D Simulation of DNAPL-Water Flow
5.2.1 Primary DNAPL Imbibition in Homogeneous Soil

Sommario/riassunto

Learn the fundamental concepts that underlie the physics of multiphase flow and transport in porous media with the information in Essentials of Multiphase Flow in Porous Media, which demonstrates the mathematical-physical ways to express and address multiphase flow problems. Find a logical, step-by-step introduction to everything from the simple concepts to the advanced equations useful for addressing real-world problems like infiltration, groundwater contamination, and movement of non-aqueous phase liquids. Discover and apply the governing equations for application to these and other p

2. Record Nr.	UNISA996215163203316
Titolo	Développement durable & territoires
Pubbl/distr/stampa	Lille [France], : Université de Lille, Centre lillois d'études et de recherches sociologiques et économiques
Descrizione fisica	1 online resource
Disciplina	333.707
Soggetti	Sustainable development Sustainable development - France Environmental policy Environmental policy - France Economic development - Environmental aspects Economic development - Environmental aspects - France Développement durable Développement durable - France Environnement - Politique gouvernementale Environnement - Politique gouvernementale - France Développement économique - Aspect de l'environnement Développement économique - Aspect de l'environnement - France sustainable development environmental policy Periodicals. France
Lingua di pubblicazione	Francese
Formato	Materiale a stampa
Livello bibliografico	Periodico
Note generali	Refereed/Peer-reviewed