1.

Record Nr.	UNIPARTHENOPE000003785
Autore	McCann, Philip
Titolo	The economics of industrial location : a logistics-costs approach / Philip McCann
Pubbl/distr/stampa	Berlin [etc.] : Springer, 1998
ISBN	3-540-64586-1
Descrizione fisica	XI, 228 p. ; 24 cm
Collana	Advances in spatial science
Disciplina	338.6042
Collocazione	338-E/24
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2.

Record Nr.	UNINA9910141300103321
Autore	Herrera Ismael
Titolo	Mathematical modeling in science and engineering [[electronic resource]] : an axiomatic approach / / Ismael Herrera, George F. Pinder
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, 2012
ISBN	1-280-59115-3 9786613620989 1-118-20722-X 1-118-20723-8 1-118-20720-3
Edizione	[1st ed.]
Descrizione fisica	1 online resource (259 p.)
Classificazione	TEC009000
Altri autori (Persone)	PinderGeorge Francis <1942->
Disciplina	501/.51
Soggetti	System analysis - Mathematical models Science - Mathematical models Engineering - Mathematical models Electronic books.
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	MATHEMATICAL MODELING IN SCIENCE AND ENGINEERING: An Axiomatic Approach; CONTENTS; Preface; 1 AXIOMATIC FORMULATION OF THE BASIC MODELS; 1.1 Models; 1.2 Microscopic and macroscopic physics; 1.3 Kinematics of continuous systems; 1.3.1 Intensive properties; 1.3.2 Extensive properties; 1.4 Balance equations of extensive and intensive properties; 1.4.1 Global balance equations; 1.4.2 The local balance equations; 1.4.3 The role of balance conditions in the modeling of continuous systems; 1.4.4 Formulation of motion restrictions by means of balance equations; 1.5 Summary; Exercises; References 2 MECHANICS OF CLASSICAL CONTINUOUS SYSTEMS2.1 One-phase systems; 2.2 The basic mathematical model of one-phase systems; 2.3 The extensive/intensive properties of classical mechanics; 2.4 Mass conservation; 2.5 Linear momentum balance; 2.6 Angular momentum balance; 2.7 Energy concepts; 2.8 The balance of kinetic energy; 2.9 The balance of internal energy; 2.10 Heat equivalent of mechanical work; 2.11 Summary of basic equations for solid and fluid mechanics; 2.12 Some basic concepts of thermodynamics; 2.12.1 Heat transport; 2.13 Summary; Exercises; References 3 MECHANICS OF NON-CLASSICAL CONTINUOUS SYSTEMS3.1 Multiphase systems; 3.2 The basic mathematical model of multiphase systems; 3.3 Solute transport in a free fluid; 3.4 Transport by fluids in porous media; 3.5 Flow of fluids through porous media; 3.6 Petroleum reservoirs: the black-oil model; 3.6.1 Assumptions of the black-oil model; 3.6.2 Notation; 3.6.3 Family of extensive properties; 3.6.4 Differential equations and jump conditions; 3.7 Summary; Exercises; References; 4 SOLUTE TRANSPORT BY A FREE FLUID; 4.1 The general equation of solute transport by a free fluid; 4.2 Transport processes 4.2.1 Advection4.2.2 Diffusion processes; 4.3 Mass generation processes; 4.4 Differential equations of diffusive transport; 4.5 Well-posed problems for diffusive transport; 4.5.1 Time-dependent problems; 4.5.2 Steady state; 4.6 First-order irreversible processes; 4.7 Differential equations of non-diffusive transport; 4.8 Well-posed problems for non-diffusive transport; 4.8.1 Well-posed problems in one spatial dimension; 4.8.2 Well-posed problems in several spatial dimensions; 4.8.3 Well-posed problems for steady-state models; 4.9 Summary; Exercises; References 5 FLOW OF A FLUID IN A POROUS MEDIUM5.1 Basic assumptions of the flow model; 5.2 The basic model for the flow of a fluid through a porous medium; 5.3 Modeling the elasticity and compressibility; 5.3.1 Fluid compressibility; 5.3.2 Pore compressibility; 5.3.3 The storage coefficient; 5.4 Darcy's law; 5.5 Piezometric level; 5.6 General equation governing flow through a porous medium; 5.6.1 Special forms of the governing differential equation; 5.7 Applications of the jump conditions; 5.8 Well-posed problems; 5.8.1 Steady-state models; 5.8.2 Time-dependent problems 5.9 Models with a reduced number of spatial dimensions
Sommario/riassunto	A powerful, unified approach to mathematical and computational modeling in science and engineering Mathematical and computational modeling makes it possible to predict the behavior of a broad range of systems across a broad range of disciplines. This text guides students and professionals through the axiomatic approach, a powerful method that will enable them to easily master the principle types of mathematical and computational models used in engineering and

science. Readers will discover that this axiomatic approach not only enables them to systematically construct effective models,