

1. Record Nr.	UNINA9910807295603321
Autore	Guo Zhaoli
Titolo	Lattice Boltzmann method and its applications in engineering // Zhaoli Guo, Huazhong University of Science and Technology, China, Chang Shu, National University of Singapore, Singapore
Pubbl/distr/stampa	Singapore ; ; Hackensack, NJ, : World Scientific, c2013 New Jersey : , : World Scientific, , [2013] 2013
ISBN	981-4508-30-6
Descrizione fisica	1 online resource (xiii, 404 pages) : illustrations (some color)
Collana	Advances in computational fluid dynamics ; ; vol. 3
Disciplina	530.138
Soggetti	Lattice Boltzmann methods Fluid dynamics - Mathematical models Mechanics, Applied - 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 (p. 373-396) and index.
Nota di contenuto	Dedication; Preface; Contents; Chapter 1 Introduction; 1.1 Description of Fluid System at Different Scales; 1.1.1 Microscopic description: molecular dynamics; 1.1.2 Mesoscopic description: kinetic theory; 1.1.3 Macroscopic description: hydrodynamic equations; 1.2 Numerical Methods for Fluid Flows; 1.3 History of LBE; 1.3.1 Lattice gas automata; 1.3.2 From LGA to LBE; 1.3.3 From continuous Boltzmann equation to LBE; 1.4 Basic Models of LBE; 1.4.1 LBGK models; 1.4.2 From LBE to the Navier-Stokes equations: Chapman-Enskog expansion; 1.4.3 LBE models with multiple relaxation times; 1.5 Summary Chapter 2 Initial and Boundary Conditions for Lattice Boltzmann Method 2.1 Initial Conditions; 2.1.1 Equilibrium scheme; 2.1.2 Non-equilibrium scheme; 2.1.3 Iterative method; 2.2 Boundary Conditions for Flat Walls; 2.2.1 Heuristic schemes; 2.2.2 Hydrodynamic schemes; 2.2.3 Extrapolation schemes; 2.3 Boundary Conditions for Curved Walls; 2.3.1 Bounce-back schemes; 2.3.2 Fictitious equilibrium schemes; 2.3.3 Interpolation schemes; 2.3.4 Non-equilibrium extrapolation scheme; 2.4 Pressure Boundary Conditions; 2.4.1 Periodic boundary conditions; 2.4.2 Hydrodynamic schemes

2.4.3 Extrapolation schemes
2.5 Summary; Chapter 3 Improved Lattice Boltzmann Models; 3.1 Incompressible Models; 3.2 Forcing Schemes with Reduced Discrete Lattice Effects; 3.2.1 Scheme with modified equilibrium distribution function; 3.2.2 Schemes with a forcing term; 3.2.3 Analysis of the forcing schemes; 3.2.4 Forcing scheme for MRT-LBE; 3.3 LBE with Nonuniform Grids; 3.3.1 Grid-refinement and multi-block methods; 3.3.2 Interpolation methods; 3.3.3 Finite-difference based LBE methods; 3.3.4 Finite-volume based LBE methods; 3.3.5 Finite-element based LBE methods
3.3.6 Taylor series expansion and least square based methods
3.4 Accelerated LBE Methods for Steady Flows; 3.4.1 Spectrum analysis of the hydrodynamic equations of the standard LBE; 3.4.2 Time-independent methods; 3.4.3 Time-dependent methods; 3.5 Summary; Chapter 4 Sample Applications of LBE for Isothermal Flows; 4.1 Algorithm Structure of LBE; 4.2 Lid-Driven Cavity Flow; 4.3 Flow around a Fixed Circular Cylinder; 4.4 Flow around an Oscillating Circular Cylinder with a Fixed Downstream One; 4.5 Summary; Chapter 5 LBE for Low Speed Flows with Heat Transfer; 5.1 Multi-speed Models
5.1.1 Low-order models
5.1.2 High-order models; 5.2 MS-LBE Models Based on Boltzmann Equation; 5.2.1 Hermite expansion of distribution function; 5.2.2 Temperature/flow-dependent discrete velocities; 5.2.3 Temperature-dependent discrete velocities; 5.2.4 Constant discrete velocities; 5.2.5 MS-LBGK models based on DVBE with constant discrete velocities; 5.3 Off-Lattice LBE Models; 5.4 MS-LBE Models with Adjustable Prandtl Number; 5.5 DDF-LBE Models without Viscous Dissipation and Compression Work; 5.5.1 DDF-LBE based on multi-component models; 5.5.2 DDF-LBE for non-ideal gases
5.5.3 DDF-LBE for incompressible flows

Sommario/riassunto

Lattice Boltzmann method (LBM) is a relatively new simulation technique for the modeling of complex fluid systems and has attracted interest from researchers in computational physics. Unlike the traditional CFD methods, which solve the conservation equations of macroscopic properties (i.e., mass, momentum, and energy) numerically, LBM models the fluid consisting of fictive particles, and such particles perform consecutive propagation and collision processes over a discrete lattice mesh. This book will cover the fundamental and practical application of LBM. The first part of the book consists of

2. Record Nr.	UNINA9910892804103321
Titolo	Annual report // Patented Medicine Prices Review Board
Pubbl/distr/stampa	[Ottawa], : Patented Medicine Prices Review Board, [199-]-
Classificazione	cci1icc coll11 coll14 coll29 coll108
Disciplina	353.9/98285/097105
Soggetti	Drugs - Prices - Canada Patents - Canada Pharmaceutical policy - Canada Pharmacy - Research - Canada Drugs - Research - Canada Medicaments - Prix - Canada Brevets d'invention - Canada Medicaments - Politique gouvernementale - Canada Medicaments - Recherche - Canada Drugs - Research Drugs - Prices Patents Pharmaceutical policy Pharmacy - Research Periodicals Canada
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Periodico
Note generali	Title from cover. Title from title screen (viewed on Aug. 2, 2000). Distributed by the Government of Canada Depository Services Program. Issued also in French under title:

