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| Disciplina | 530.1/3 |
| Soggetti | Physics Thermodynamics Statistical physics Dynamical systems Condensed matter Atoms Mathematical Methods in Physics Numerical and Computational Physics, Simulation Complex Systems Condensed Matter Physics Atomic, Molecular, Optical and Plasma Physics |
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| Nota di contenuto | Microscopic reversibility and macroscopic behavior: Physical explanations and mathematical derivations -- Twenty-five years of non-equilibrium statistical mechanics: Towards a better understanding of dense fluids -- Models for dissipation in quantum mechanics -- Brownian motion theory: Properties of nonlinear Langevin equations -- Non-equilibrium, phase transition, and related problem -- Simulation of the consistent Boltzmann equation for hard spheres and its extension to higher densities -- Over two decades of pattern formation, a personal perspective -- Fluctuations in the steady state -- Slow non-equilibrium dynamics -- Theory of glass transition in spin |

glasses, orientational glasses and structural glasses -- Evolution of order parameters in disordered spin systems — a closure procedure -- Elastic instabilities in crystal growth -- Vapor phase nucleation: Molecular mechanisms for embryo development -- Chaos in Lorentz lattice gases -- Dynamics of reptation -- Non-equilibrium fluctuations in simple fluids -- Long time tails in stress correlation functions -- New advances in Laplacian growth models -- Slow dynamics and linear relaxation -- Driven tunneling: New possibilities for coherent and incoherent quantum transport -- From the Random Sequential Adsorption to the ballistic model -- High frequency viscosity of a dilute polydisperse emulsion -- Mesoscopic theory of liquid crystals -- On the microscopic theory of phase coexistence -- A nonequilibrium phase transition induced by multiplicative noise -- Electric field domains in superlattices: Dynamics -- Molecular dynamics simulation of phase separation and domain growth -- Finite-size effects in the Kardar-Parisi-Zhang equation -- Competing scaling behaviours in the late stage of growth kinetics -- Stretched-exponential relaxation of transient electric birefringence in polymer-like reverse micelles.

Sommario/riassunto

The book aims to give an overview of the previous Sitges Conferences, which have been held during the last 25 years, with special emphasis on topics related to non-equilibrium phenomena. It includes review articles and articles dealing with new trends in the subject, written by scientists who have played an important role in the development of this area. The book is intended as a commemorative edition of the Sitges Conferences. Graduate students of physics and researchers will find this a stimulating account of the development of non-equilibrium statistical mechanics in the last years, covering a wide scope of topics: kinetic theory, hydrodynamics, fluctuation phenomena and stochastic processes, relaxation phenomena, kinetics of phase transitions, growth kinetics, and so on.
