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Collana	Graduate Texts in Physics, , 1868-4513
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Soggetti	Physics Chemometrics Statistical physics Thermodynamics Statistics Mathematical Methods in Physics Math. Applications in Chemistry Applications of Nonlinear Dynamics and Chaos Theory Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences
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Livello bibliografico	Monografia
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Nota di contenuto	Random Variables -- Sequence of Independent Variables -- Langevin equation -- Fokker-Planck Equation I -- Fokker-Planck Equation II -- Markov Chains -- Master Equation I -- Master Equation II -- Phase Transitions and Criticality -- Reactive Systems -- Glauber Model -- Systems with Inversion Symmetry -- Systems with Absorbing States -- Population Dynamics -- Probabilistic Cellular automata -- Reaction-Diffusion Processes -- Random Sequential Adsorption -- Percolation.
Sommario/riassunto	This textbook presents an exposition of stochastic dynamics and irreversibility. It comprises the principles of probability theory and the stochastic dynamics in continuous spaces, described by Langevin and Fokker-Planck equations, and in discrete spaces, described by Markov chains and master equations. Special concern is given to the study of irreversibility, both in systems that evolve to equilibrium and in

nonequilibrium stationary states. Attention is also given to the study of models displaying phase transitions and critical phenomena both in thermodynamic equilibrium and out of equilibrium. These models include the linear Glauber model, the Glauber-Ising model, lattice models with absorbing states such as the contact process and those used in population dynamics and spreading of epidemic, probabilistic cellular automata, reaction-diffusion processes, random sequential adsorption and dynamic percolation. A stochastic approach to chemical reaction is also presented. The textbook is intended for students of physics and chemistry and for those interested in stochastic dynamics. It provides, by means of examples and problems, a comprehensive and detailed explanation of the theory and its applications.
