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Nota di contenuto	Reflection Positivity and Phase Transitions in Lattice Spin Models -- Stochastic Geometry of Classical and Quantum Ising Models -- Localization Transition in Disordered Pinning Models -- Metastability -- Three Lectures on Metastability Under Stochastic Dynamics -- A Selection of Nonequilibrium Issues -- Facilitated Spin Models: Recent and New Results.
Sommario/riassunto	This volume presents a collection of courses introducing the reader to the recent progress with attention being paid to laying solid grounds and developing various basic tools. An introductory chapter on lattice

spin models is useful as a background for other lectures of the collection. The topics include new results on phase transitions for gradient lattice models (with introduction to the techniques of the reflection positivity), stochastic geometry reformulation of classical and quantum Ising models, the localization/delocalization transition for directed polymers. A general rigorous framework for theory of metastability is presented and particular applications in the context of Glauber and Kawasaki dynamics of lattice models are discussed. A pedagogical account of several recently discussed topics in nonequilibrium statistical mechanics with an emphasis on general principles is followed by a discussion of kinetically constrained spin models that are reflecting important peculiar features of glassy dynamics.