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Nota di bibliografia	Includes bibliographical references (p. [297]-308) and index.
Nota di contenuto	Principles of statistical mechanics -- Lattice gases and spin systems -- Gibbsian formalism for lattice spin systems -- Cluster expansions -- Gibbsian formalism and metastates -- The random-field Ising model -- Disordered mean-field models -- The random energy model -- Derrida's generalized random energy models -- The SK models and the Parisi solution -- Hopfield models -- The number partitioning problem.
Sommario/riassunto	This self-contained book is a graduate-level introduction for mathematicians and for physicists interested in the mathematical foundations of the field, and can be used as a textbook for a two-semester course on mathematical statistical mechanics. It assumes only basic knowledge of classical physics and, on the mathematics side, a

good working knowledge of graduate-level probability theory. The book starts with a concise introduction to statistical mechanics, proceeds to disordered lattice spin systems, and concludes with a presentation of the latest developments in the mathematical understanding of mean-field spin glass models. In particular, progress towards a rigorous understanding of the replica symmetry-breaking solutions of the Sherrington-Kirkpatrick spin glass models, due to Guerra, Aizenman-Sims-Starr and Talagrand, is reviewed in some detail.
