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Nota di bibliografia	Includes bibliographical references (p. 233-247) and index.
Nota di contenuto	Polymers with Self-Interaction -- Soft Polymers in Low Dimension -- Soft Polymers in High Dimension -- Elastic Polymers -- Polymer Collapse -- Polymer Adsorption -- Polymers in Random Environment -- Charged Polymers -- Copolymers near a Linear Selective Interface -- Copolymers near a Random Selective Interface -- Random Pinning and Wetting of Polymers -- Polymers in a Random Potential -- Two Basic Models.
Sommario/riassunto	Polymer chains that interact with themselves and/or with their environment are fascinating objects, displaying a range of interesting physical and chemical phenomena. The focus in this monograph is on the mathematical description of some of these phenomena, with particular emphasis on phase transitions as a function of interaction parameters, associated critical behavior and space-time scaling. Topics include: self-repellent polymers, self-attracting polymers, polymers interacting with interfaces, charged polymers, copolymers near linear or random selective interfaces, polymers interacting with random substrate and directed polymers in random environment. Different techniques are exposed, including the method of local times, large deviations, the lace expansion, generating functions, the method of excursions, ergodic theory, partial annealing estimates, coarse-graining techniques and martingales. Thus, this monograph offers a mathematical panorama of polymer chains, which even today holds plenty of challenges.