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Nota di contenuto	1 Stochastic Processes, Polymer Dynamics, and Fluid Mechanics -- 1.1 Approach to Kinetic Theory Models -- 1.2 Flow Calculation and Material Functions -- References -- I Stochastic Processes -- 2 Basic Concepts from Stochastics -- 3 Stochastic Calculus -- II Polymer Dynamics -- 4 Bead-Spring Models for Dilute Solutions -- 5 Models with Constraints -- 6 Reptation Models for Concentrated Solutions and Melts -- Landmark Papers and Books -- Solutions to Exercises -- References -- Author Index.
Sommario/riassunto	This book consists of two strongly interweaved parts: the mathematical theory of stochastic processes and its applications to molecular theories of polymeric fluids. The comprehensive mathematical

background provided in the first part should be equally useful in many other branches of engineering and the natural sciences. As a benefit from the second part one gains a more direct understanding of polymer dynamics, one can more easily identify exactly solvable models, and one can develop efficient computer simulation algorithms in a straightforward manner. In view of the many examples and exercises, on the one hand, and the numerous applications to problems from the front line of science, on the other hand, this volume may be used equally well as a basic textbook or as an up-to-date reference book.