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                      by Martin Kröger

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   Soggetti   Amorphous substances
                      Complex fluids
                      Polymers
                      Continuum physics
                      Physics
                      Mechanics
                      Mechanics, Applied
                      Soft and Granular Matter, Complex Fluids and Microfluidics
                      Polymer Sciences
                      Classical and Continuum Physics
                      Numerical and Computational Physics, Simulation
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   Nota di contenuto Simpler Models for Polymeric Liquids Far from Equilibrium -- Dumbbell
                      Model for Dilute and Semi-Dilute Solutions -- Chain Model for Dilute
                      Solutions -- Chain Model for Concentrated Solutions and Melts --
                      Chain Models for Transient and Semiflexible Structures -- Primitive
                      Path Models -- Elongated Particle Models.

   Sommario/riassunto Models should be as simple as possible, but no simpler. For the physics
                      of polymeric liquids, whose relevant lengths and time scales are out of
                      reach for first principles calculations, this means that we have to
                      choose a minimum set of sufficiently detailed descriptors such as
                      architecture (linear, ring, branched), connectivity, semiflexibility,

stretchability, excluded volume, and hydrodynamic interaction. These 'universal' fluids allow the prediction of material properties under external flow- or electrodynamic fields, the results being expressed in terms of reference units, specific for any particular chosen material. This book provides an introduction to the kinetic theory and computer simulation methods needed to handle these models and to interpret the results. Also included are a number of sample applications and computer codes.