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Nota di contenuto	Conformation of Polymer Chains; Rubber Elasticity; Polymer Chain Dynamics; Linear Viscoelasticity; Stress and Strain; Molecular Theory of Polymer Viscoelasticity - Elastic Dumbbell Model; Molecular Theory of Polymer Viscoelasticity - The Rouse Model; Molecular Theory of Polymer Viscoelasticity - Entanglement and the Doi-Edwards (Reptation) Model; Molecular Theory of Polymer Viscoelasticity - Processes in the Linear Relaxation Modulus; Comparison of Theory and Experiment in Linear Viscoelasticity and Diffusion; Concentration Dependence of Entanglement, Onset of Entanglement, and Tube Dilation; Molecular Theory of Polymer Viscoelasticity - Processes in the Nonlinear Relaxation Modulus; Number of Entanglement Strands per Cubed Entanglement Distance.
Sommario/riassunto	In this work, the studies of the Rouse, Doi-Edwards, and extended reptation theories are developed from a basic level and discussed in detail. Viscoelastic properties of nearly monodisperse linear flexible polymers in both the entanglement and entanglement-free regions are analyzed.