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Nota di contenuto	Preface; CONTENTS; I. Fundamental Properties of Glasses; 1. General Description of Glasses and Glass Transition; 1.1. Metastability and disorder. Types of glasses; 1.2. Qualitative description of glass (liquid-to-glass) transition; 1.3. Kinetic and thermodynamic properties; 1.4. Slow relaxation processes; 2. Models of Glassy (Topologically Disordered) Structures; 2.1. Characteristics of glassy structures; 2.2. Homogeneous (ideal) models; 2.3. Inhomogeneous (cluster) models; 3. Some Theoretical Models of Glass Transition; 3.1. Vogel-Fulcher relation and "entropy crisis" 3.2. Role of configurational entropy, free-volume effects and "defects" diffusion 3.3. Mode-coupling model: Dynamic liquid-glass transition; 4. Kohlrausch-William-Watt (KWW) Relaxation; 4.1. General features of slow relaxation processes; 4.2. Parallel-diffusion relaxation models; 4.3. Correlated, hierarchically constrained, relaxation models; 4.4. Concluding remarks; II. Anomalous Low-Energy Dynamics of Glasses; 5. Origin of Anomalous Low-Energy Properties of Glasses; 6. Experimental Background for Anomalous Low-Energy Atomic Dynamics; 6.1. Very low temperatures and frequencies

6.2. Moderately low temperatures and frequencies
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Sommario/riassunto

The present book describes the fundamental features of glassy disordered systems at high temperatures (close to the liquid-to-glass transition) and for the first time in a book, the universal anomalous properties of glasses at low energies (i.e. temperatures/frequencies lower than the Debye values) are depicted. Several important theoretical models for both the glass formation and the universal anomalous properties of glasses are described and analyzed. The origin and main features of soft atomic-motion modes and their excitations, as well as their role in the anomalous properties, are considered.
