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10.5. Total vibrational density of states: dynamic properties10.6. Width (attenuation) of acoustic phonons; 10.7. Thermal vibrational properties of glasses; 11. On Universal and Non-Universal Dynamic Properties of Glasses; 11.1. Very low temperatures and frequencies; 11.1.1. On universality of basic distributions in ATM; 11.1.2. On universality of soft-mode distribution inSMM; 11.2. Moderately low temperatures and frequencies; 12. Other Models for Glasses with High Frequency Sound; 12.1. Theoretical mode-coupling model; 12.2. Theoretical random-matrix model
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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 conside