

Kinetic, thermodynamic, and Adam-Gibbs fragilities

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Abstract:

The kinetic fragility of glass formers, defined through the temperature variation of viscosity and relaxation times, has been sought to be related to thermodynamic behavior of glass formers through the Adam-Gibbs relation, with initial attention focussed on the temperature variation of the configurational entropy. However, more recent work highlights the importance of the high temperature activation free energy, and leads to the defining of an Adam-Gibbs fragility in addition to the thermodynamic fragility that is captured by the temperature dependence of the configurational entropy. The extent to which observed fragilities of various systems can be rationalized is discussed.