

Abstract Submitted
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Correlating structural and dynamic fragility in glass-forming liquids¹ DMITRY VOYLOV, Univ of Tennessee, Knoxville, PHILIP GRIFFIN, University of Pennsylvania, BRANDON MERCADO, Yale University, JONG KEUM, Oak Ridge National Laboratory, VLADIMIR NOVIKOV, ALEXEI SOKOLOV, Univ of Tennessee, Knoxville — The glass transition was attracting wide interest over the last several decades, but still remains the topic of intensive research and discussions. One of the most intriguing and well-known observations is a drastic change of dynamic properties with only slight variations of structure upon cooling down to the glass transition temperature T_g . This has led many to believe that the changes of dynamics during approach to T_g have no structural signatures which would be significant and common to different types of glass-forming liquids. Here we demonstrate analysis of temperature dependence of the main diffraction peak in a static structure factor of various glass-formers. We show that the relative changes of its width with temperature correlates with fragility of these materials. This observation was analyzed using Adam-Gibbs approach establishing a connection between the structural and dynamical properties of glass-forming materials.

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