

Abstract Submitted
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A Simple Model of Dynamic Heterogeneity: Connection with Experimental Results¹ JANE LIPSON, Dartmouth College, NICHOLAS TITO, Cambridge University, SCOTT MILNER, The Pennsylvania State University — We have developed the Limited Mobility (LM) model to study dynamic heterogeneity in a system that exhibits kinetic arrest, i.e. a glass transition. In recent work we have investigated the approach to the bulk transition from above and below, as well as the effects of perturbations on the transition. Results in the latter area have included looking at buried slabs of different mobility than the surround, as well as studies on a supported film. In this talk we will focus on characterizing sample mobility in the bulk, via measurement of the diffusion constant of mobile material, D , as well as in a film, via characterization of mobility fronts. We find that as the bulk glass transition is approached the LM model exhibits the same kind of deviation from Stokes-Einstein behaviour as is observed in experiment and other model studies. In the film the LM model shows a time-dependent growth of the mobility front that scales with the same D that characterizes mobility in analogous bulk samples; this has also been seen experimentally in glass-forming liquids. These results will be discussed, in addition to others that help connect the LM model with data on real systems.

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