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Short Time Dynamics in Melts Near the Glass Transition AARON WILSON, New Mexico Tech, JOHN MCCOY, New Mexico Tech, JOANNE BUDZIEN, Sandia National Labs, DOUGLAS ADOLF, Sandia National Labs — Molecular dynamics simulations were performed on the diffusion of penetrants in bead-spring chains. When the diffusion coefficient is plotted as a function of packing fraction, (1) results at different temperatures and pressures collapse to a single curve and (2) an apparent glass transition is seen. Short time dynamics are analyzed in terms of the velocity autocorrelation function which is seen to approach the fully caged particle limit.

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