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Relaxation in a glassy binary mixture: A comparison of a Brownian Dynamics simulation and the mode-coupling theory ELIJAH FLENNER, GRZEGORZ SZAMEL, Dept. of Chemistry, Colorado State University — We compare results of Brownian Dynamics simulations of a glassy binary mixture with predictions of the mode-coupling theory for the same mixture. The mode-coupling equations for the time evolution of the coherent and the incoherent scattering functions were solved for a number of temperatures using as input the structure factors determined from the simulations. As found in earlier studies, the mode-coupling theory predicts an ergodicity breaking transition at a temperature that is approximately twice higher than the *crossover* temperature inferred from Brownian Dynamics simulation results. However, when compared at the same $T - T_c$, time-dependent quantities predicted by the mode-coupling theory agree reasonably well with those obtained from simulations except at the lowest temperatures.

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