

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Local correlations and local responses in the aging of a sample

ALLEN DAHLI, HORACIO CASTILLO, Department of Physics and Astronomy, Ohio University — We investigate the relationship between local fluctuations in the correlation and the response in a three dimensional structural glass model. We perform molecular dynamics simulations of a binary Lennard-Jones mixture and measure local correlations and responses in small regions of the system, after a quench into the glass regime. We compare the joint probability distribution of these local quantities with the out-of-equilibrium fluctuation-dissipation relation of the bulk system. We also compare our results with the results of analogous simulations in short range spin glass systems, which support the presence of a soft mode in the aging dynamics.

Allen Dahili
Department of Physics and Astronomy, Ohio University

Date submitted: 14 Dec 2004

Electronic form version 1.4