

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Local Disturbances of Binary Colloidal Glass Systems BENJAMIN BLUTH, Emory University, PIOTR HABDAS, St. Joseph's University, ERIC R. WEEKS, Emory University — We look at local disturbances in colloidal systems as they approach the glass transition. A colloidal system is a fluid filled with microscopic particles which can serve as a model for the atoms of a glass. When the concentration of these particles becomes sufficiently large the particles can no longer move. This is the point which we refer to as the glass transition. We study systems at concentrations just below the glass transition by “pulling” a magnetic bead through the sample using an external magnetic field. In our samples there are particles of two distinct sizes that have been dyed such that they fluoresce at different wavelengths. This allows the microscope to differentiate between the two sizes and gives us the ability to isolate and analyze their respective motions independently. From this we examine the motion of the surrounding colloids as the magnetic bead is pulled through the sample, and characterize the behavior as the glass transition is approached.

Benjamin Bluth
Emory University

Date submitted: 01 Dec 2005

Electronic form version 1.4