Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Studying microscopic rearrangements in a sheared supercooled colloidal liquid DANDAN CHEN, DENIS SEMWOGERERE, JOAQUIM CLARA-RAHOLA, ERIC R. WEEKS, Emory University — Shearing induces complex micro-structure changes inside an amorphous material, which is related to interesting phenomena like shear thicking and shear thinning. We use a colloidal suspension to simulate amorphous materials, and we study how shearing changes this structure using fast confocal microscopy. Many experiments and simulations have found macro-stress flucatuations in sheared dense jammed suspensions. However, the micro-rearrangements of the particles while being sheared are not very clear. We study the non-affine motion of the colloids, finding the particles move in groups, and characterize these groups for different shearing rates.

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Date submitted: 22 Nov 2007 Electronic form version 1.4