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Shear Induced Structural Relaxation in a Supercooled Colloidal Liquid DANDAN CHEN, DENIS SEMWOGERERE, ERIC R. WEEKS, Physics Dept., Emory University — Amorphous materials include many common products we use everyday, such as window glass, moisturizer, shaving cream and peanut butter. These materials have liquid-like disordered structure, but keep their shapes like a solid. The rheology of dense amorphous materials under large shear strain is not fully understood, partly due to the difficulty of directly viewing the microscopic details of such materials. We use a colloidal suspension to simulate amorphous materials, and study the shear- induced structural relaxation with fast confocal microscopy. We quantify the plastic rearrangements of the particles using standard analysis techniques based on the motion of the particles.

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