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Influence of Confinement on Dynamical Heterogeneities in Dense Colloidal Samples KAZEM EDMOND, ERIC R. WEEKS, Department of Physics, Emory University — We study a colloidal suspension confined between two parallel walls as a model system for glass transitions in confined geometries. The suspension is a mixture of two particle sizes to prevent wall-induced crystallization. We use confocal microscopy to directly observe the motion of the colloidal particles. This motion is slower in confinement, thus producing glassy behavior in a sample which is a liquid in an unconfined geometry. Like particles in an unconfined near-glassy system, groups of particles in our confined system move together cooperatively. Normally these groups would be spatially isotropic. However, the confining boundaries induce a layering of the particles. We show that the layering modifies the shapes of the mobile groups within the sample so that they are planar. We investigate how the planar restriction of the shapes of the mobile groups may be the cause of the sample's glassy behavior.

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