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Influence of Boundary Mobility on the Dynamics of Confined Colloidal Suspensions GARY L. HUNTER, KAZEM V. EDMOND, ERIC R. WEEKS, Emory University (Physics) — We use fast confocal microscopy to study the influence of interfacial mobility and confinement on the dynamics of dense colloidal suspensions. Experiments on confined molecular super-cooled liquids have shown that hard/immobile boundaries result in an increase in relaxation times relative to bulk measurements, whereas soft/mobile boundaries lead to a decrease in relaxation times. We confine suspensions of PMMA microspheres within emulsion droplets of different sizes, thereby probing the consequences of confinement. By changing the viscosity of the external, continuous phase, we also control the interfacial mobility of our samples. In this way, we separate the two effects and draw comparisons between mobility within colloidal suspensions and molecular liquids.

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