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Effect of Boundary Mobility on the Dynamics of Confined Colloidal Suspensions GARY L. HUNTER, KAZEM V. EDMOND, ERIC R. WEEKS, Emory University — We use high-speed confocal microscopy to study the influence of boundary mobility on the dynamics of confined colloidal suspensions. Experiments in molecular super-cooled liquids show that confinement can enhance or hinder sample mobility, depending on whether the confining boundary is “soft” (mobile) or “hard” (immobile). We confine suspensions of PMMA microspheres within emulsion droplets of different sizes to examine the consequences of confinement. By changing the viscosity of the external, continuous phase, we also vary the boundary mobility of our samples. In this way, we decouple the effects of confinement and boundary mobility, and draw comparisons between colloidal suspensions and molecular liquids.

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