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Confinement of Colloidal Suspensions in a Cylindrical Geometry NABIHA SAKLAYEN, GARY L. HUNTER, KAZEM V. EDMOND, ERIC R. WEEKS, Emory University — We study binary colloidal suspensions confined within a glass microcapillary to model the glass transition in confined cylindrical geometries. We use high speed three-dimensional confocal microscopy to observe particle dynamics. The use of a slightly tapered microcapillary enables us to probe a range of local volumes for a single colloidal sample. We observe that confinement of the sample slows down particles. In addition, the particles form layers against the capillary walls; these layers also influence particle mobility. We see that even though confinement is primarily responsible for slowing down particles, particles within a layer are seen to move even slower. Within each region of the microcapillary, the mobility perpendicular to the confining boundaries is influenced by distance from the confinement boundary, while the parallel component of mobility is not.

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