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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 colloidal suspensions confined within a tapered glass microcapillary to model the glass transition in confined cylindrical geometries. We observe the particle dynamics using high speed three-dimensional confocal microscopy. The microcapillary is only slightly tapered, providing a range of local volumes for a single colloidal sample. Confinement of the samples slows down particle motion and induces glassy behavior. Additionally, the particles layer against the capillary walls, and these layers appear to have a secondary effect on particle mobility; particles within a layer move even slower, in addition to the primary slowness caused by the confinement. We observe that within each region, the component of mobility perpendicular to the confining boundaries varies radially while the parallel component does not.

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