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Stressed out colloids: The effects of gravity on sedimented suspensions DANIEL L. BLAIR, JACINTA CONRAD, DEAS/Dept of Physics, Harvard University, ERIC R. DUFRESNE, Yale Univeristy, DAVID A. WEITZ, DEAS/Dept of Physics, Harvard University — Using laser scanning confocal microscopy we investigate dense hard-sphere colloidal sediments. Confocal microscopy allows for both high temporal resolution and real-space three dimensional imaging. By density mismatching the particles and solvent, and introducing slight polydispersity, we produce sediments without crystalline order that are dynamically arrested. Within these sediments, distinct clusters of particles with reduced local volume are observed. We will present our analysis of these structures, and postulate their equivalence to characteristic features of analogous jammed systems.

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