

Abstract Submitted
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Shear Events in Colloidal Glasses PETER SCHALL, University of Amsterdam, DAVID A. WEITZ, FRANS SPAEPEN, Harvard University — We analyze shear events that occur in sheared amorphous colloidal suspensions. We use the three-dimensional particle positions determined by confocal microscopy to determine irreversible local rearrangements that give rise to high local strain. These shear regions show a long-range strain field characteristic of dipolar strain events. Large displacements of only one or a few particles in the shear event core are enough to stabilize the new configuration and lead to permanent deformation. We will elucidate the interplay between thermal fluctuations and local strain that drives the nucleation of these shear regions.

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