

Abstract Submitted  
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**Particle and fluid diffusivity of non-colloidal suspensions** EM-MANOUELA FILIPPIDI, ALEXANDRE FRANCESCHINI, CHUI-LAI CHEUNG, JACOB TUTMAHER, SEAN PARADISO, TARUN JAIN, DAVID PINE, Center for Soft Matter Research, New York University — Suspensions of non-colloidal spheres at moderate volume fractions (0.2-0.4) under slow periodic strain undergo a phase transition from an absorbing to an active fluctating state. Particle trajectories change from reversible below the critical strain to irreversible above. We measure the fluid diffusivity of the fluorescently labelled fluid and compare it with the particle diffusivity in order to obtain a measure of the coupling between the two. Of particular interest is how the fluid diffusivity changes near the onset of irreversibility of the particle trajectories.

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