

Abstract Submitted
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Couette Shear for Elliptical Particles Near Jamming¹ SOMAYEH FARHADI, Duke University, ROBERT. P. BEHRINGER COLLABORATION — We have performed 2D Couette shear experiments on systems of photoelastic particles. The particles are identical ellipses with aspect ratio 2. We use the photoelastic property of the disks to obtain the forces acting on a particle. We use two cameras to simultaneously image the particle motion and the photoelastic force response. Using ellipses enables us to understand the effect of particle shape asymmetry on the large-scale behavior on the rheological behavior of granular systems near jamming. Of particular interest are the nematic ordering of the ellipses, the formation of shear bands and the nature of force transmission.

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