

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Tumbling Motion of Interacting U-Shaped Particles in a Uniform Shear Flow Near Jamming¹ THEODORE MARSCHALL, University of Rochester, SCOTT FRANKLIN, Rochester Institute of Technology, STEPHEN TEITEL, University of Rochester — We simulate a system of overdamped frictionless U-shaped particles (staples) in a uniformly sheared host fluid. An isolated staple in such a shear flow undergoes a tumbling motion due to its asymmetric shape, with average angular velocity proportional to the shear strain rate. We investigate how this tumbling motion is modified in a dense system of interacting staples as we approach the jamming transition.

¹Work supported by NSF grant CBET-1133126. Computations carried out at the Center for Integrated Research Computing at the Univ of Rochester.

Theodore Marschall
University of Rochester

Date submitted: 15 Nov 2013

Electronic form version 1.4