

Abstract Submitted
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The Sounds of Failure¹ TED BRZINSKI, Haverford College, KAREN DANIELS, NC State University — Disordered solids including numerical packings of spheres, colloidal glasses and granular materials have all been shown to develop excess low-frequency vibrational modes as the jamming transition is approached from above. We report experiments on sheared granular materials in which we measure the density of excited modes in a granular system under shear via passive monitoring of acoustic emissions. We show that this quantity provides information about the changing state of the material on its approach to stick-slip failure, and may hold promise as the basis for forecasting the risk of a rupture.

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