

Abstract Submitted
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Event Scaling in Granular Stick-Slip Failures KAREN DANIELS, KATE FOCO, North Carolina State University, KARIN DAHMEN, University of Illinois at Urbana Champaign — Intermittent failure events in many systems can be characterized by scaling relations relating sizes and durations of individual events. We perform experiments on a sheared granular material which exhibits stick-slip behavior, and compare with predictions from a recent mean-field model. Our experiments are performed in a quasi-2D photoelastic granular material which is sheared via a spring moving at constant velocity. We characterize changes in the duration and size of stick-slip events as a function of packing fraction. We observe that the plate velocity $v(t)$ takes a universal shape during individual events of different sizes, as expected for systems with scaling.

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