

Abstract Submitted
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Avalanche Statistics in a Rotating Drum.¹ ALINE HUBARD, ZHUSONG LI, MARK SHATTUCK, Levich Institute and Physics Department of the City College of New York, and the Graduate Center of CUNY — We perform experiments in a quasi-two dimensional rotating drum. Two glass plates separated by about one particle diameter confine mono-disperse stainless-steel spheres to a cylindrical region. We rotate the system about the cylinder axis, which is perpendicular to gravity. Using high speed video up to 1000 fps we measure the particle positions during very slow rotation in which the flow is dominated by discrete avalanche events. We measure the avalanche size, duration, and time evolution (shape) for up to 10^5 avalanches and compare with DEM simulation and a mean field theory that predicts avalanche shape and a power-law distributions of size and duration.

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