

Abstract Submitted  
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**Intermittent turbulence in a many-body system** GURAM GOGIA, WENTAO YU, JUSTIN BURTON, Emory University — A well-known example of intermittent dynamics is the generation of transient, turbulent “puffs” in fluid flow through a pipe with rough walls. Here we show how similar dynamics can emerge in a discrete, crystalline system of particles driven by noise. Polydispersity in particle masses leads to localized vibrational modes that effectuate a transition to a gaslike phase. A minimal model for the evolution of the system’s mechanical energies exhibits quasicyclic oscillations, and a single, dimensionless number captures the essential features of the intermittent dynamics, analogous to the Reynolds number for pipe flow.

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