

Abstract Submitted
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Coarsening of Faraday Heaps: Experiment, Simulation, and Theory DEVARAJ VAN DER MEER, HENK JAN VAN GERNER, University of Twente, The Netherlands, GABRIEL A. CABALLERO-ROBLED0, CIMAV, Mexico, KO VAN DER WEELE, University of Patras, Greece, MARTIN A. VAN DER HOEF, University of Twente, The Netherlands — When a layer of granular material is vertically shaken, the surface spontaneously breaks up in a landscape of small Faraday heaps that merge into larger ones on an ever increasing timescale. This coarsening process is studied in a linear setup, for which the average lifetime of the transient state with N Faraday heaps is shown to scale as N^{-3} . We describe this process by a set of differential equations for the peak positions; the calculated evolution of the landscape is in excellent agreement with both the experiments and simulations. The same model explains the observational fact that the number of heaps towards the end of the process decreases approximately as $N(t) \propto t^{-1/2}$.

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