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Hopper Flow: Experiments and Simulation[1] ZHUSONG LI, MARK SHATTUCK, CUNY Graduate Center and the Benjamin Levich Institute and Physics Department of The City College of New York — Jamming and intermittent granular flow are important problems in industry, and the vertical hopper is a canonical example. Clogging of granular hoppers account for significant losses across many industries. We use realistic DEM simulations of gravity driven flow in a hopper to examine flow and jamming of 2D disks and compare with identical companion experiments. We use experimental data to validate simulation parameters and the form of the inter particle force law. We measure and compare flow rate, emptying times, jamming statistics, and flow fields as a function of opening angle and opening size in both experiment and simulations.

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