

Abstract Submitted
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Velocity statistics in 2D granular fluids M.D. SHATTUCK, P.M. REIS, City College of New York, The Benjamin Levich Institute — We report on the experimental velocity statistics in 2D granular fluids for three different geometries: horizontal uniformly heated, vertical heated from below, and rotated. We use stainless steel spheres (diameter D), confined by two glass plates. In the uniformly heated case, the plates are horizontal and separated by $1.6 D$ with a rough bottom plate which effectively transfers momentum from the vertical shaking into the horizontal plane. This allows us to study a large range of filling fractions. In the vertically heated case, the plates are vertical and separated by $1.05 D$ with a weight on top and a vertically vibrating bottom. In the rotating case, the wall are vertical with a separation of $1.6D$ and rotated about the horizontal. We compare and contrast the single particle velocity distributions in the various geometries and with standard kinetic theory assumptions.

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