

Abstract Submitted
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Granular gas mediated attraction of intruders in a granular Casimir effect GEORGE WILKES, BRIAN UTTER, James Madison University
— When two objects are submerged in a granular gas, entropic effects due to inelastic collisions lead to attractions between the objects. This has been referred to as an analog to the Casimir effect, though arises via a different mechanism. In this experiment, we place two objects (such as vertical plates or spheres) in either a strongly driven granular gas or dense fluid. We find that when the plates are closely spaced, there is a net attractive force. By analyzing high-speed video, we track the distance between these plates and characterize the effective force versus distance with changes in the vibration parameters and initial separation. A 2D simulation is also used to further explore parameter space.

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