

Abstract Submitted
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The effect of finite container size on granular jet formation SYLVAIN JOUBAUD, STEFAN VON KANN, GABRIEL CABALLERO-ROBLEDO, DEVARAJ VAN DER MEER, DETLEF LOHSE, PHYSICS OF FLUIDS TEAM — When an object is dropped into a bed of fine, loosely packed sand, a surprisingly energetic jet shoots out of the bed. In this work we study the effect that boundaries have on the granular jet formation. We did this by (i) decreasing the depth of the sand bed and (ii) reducing the container diameter to only a few ball diameters. These confinements change the behavior of the ball inside the bed, the void collapse, and the resulting jet height and shape. From these results we propose a new explanation for the thick-thin structure observed experimentally and reported previously.

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