

Abstract Submitted
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Jamming in Vertical Channels¹ G. WILLIAM BAXTER, JEFFREY MCCAUSLAND, FIONA STEEL, Penn State Erie, The Behrend College — We experimentally study jamming of cylindrical grains in a vertical channel. The grains have a low aspect-ratio (height/diameter < 1) so their shape is like antacid tablets or poker chips. They are allowed to fall through a vertical channel with a square cross section. The channel width is greater than the diameter of a grain and constant throughout the length of the channel with no obstructions or constrictions. It is observed that grains sometimes jam in this apparatus. In a jam, grains form a stable structure from one side of the channel to the other with nothing beneath them. Jams may be strong enough to support additional grains above. The probability of a jam occurring is a function of the grain height and diameter. We will present experimental measurements of the jamming probability in this system and discuss the relationship of these results to other experiments and theories.

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