## Abstract Submitted for the MAR13 Meeting of The American Physical Society

Jamming of Cylindrical Grains in Featureless Vertical Channels<sup>1</sup> G. WILLIAM BAXTER, NICHOLAS BARR, SETH WEIBLE, NICHOLAS FRIEDL, Penn State Erie, The Behrend College — We study jamming of low aspectratio cylindrical Delrin grains falling through a featureless vertical channel. With a grain height less than the grain diameter, these grains resemble aspirin tablets, poker chips, or coins. Unidisperse grains are allowed to fall under the influence of gravity through a uniform channel of square cross-section where the channel width is greater than the grain size and constant along the length of the channel. Channel widths are chosen so that no combination of grain heights and diameters is equal to the channel width. Collections of grains sometimes form jams, stable structures in which the grains are supported by the channel walls and not by grains or walls beneath them. The probability of a jam occurring and the jam's strength are influenced by the grain dimensions and channel width. We will present experimental measurements of the jamming probability and jam strength and discuss the relationship of these results to other experiments and theories.

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