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Jamming of Cylindrical Grains in Vertical Channels[1] G. WILLIAM BAXTER, GREGORY SPIER, NICHOLAS BARR, FIONA STEEL, Penn State Erie, The Behrend College — We study jamming of low aspect-ratio cylindrical Delrin grains in a vertical channel. These cylindrical grains resemble antacid tablets, poker chips, or coins since their height is less than their diameter. Grains are allowed to fall through a vertical channel with a square cross section where the channel width is greater than the diameter of a grain and constant throughout the length of the channel with no obstructions or constrictions. Within this channel, grains are sometimes observed to form jams, stable structures supported by the channel walls with no support beneath them. The probability of jam occurrence and the strength or robustness of a jam is effected by the grain dimensions and channel size. We will present experimental measurements of the jamming probability and jam strength in this system and discuss the relationship of these results to other experiments and theories.

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