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Random close packing of rods in confinement JULIAN FREEMAN, ERIC WEEKS, Emory Univ — We conduct experiments to observe the effects surfaces have on the internal packing structure of particles. In order to observe this, we run an experiment using cylindrical containers of different diameters, and rods of aspect ratios ranging from 4 to 32. We find that the rods packed into smaller cylindrical containers yielded lower volume fractions than in larger containers. Our results are extrapolated to an infinite container size, and the subsequent volume fraction decreases with increasing aspect ratios, in agreement with previous simulations. We find that the surface effect on internal packing decreases with aspect ratio as well. We also perform simulations in order to gather more data on boundary effects on internal packing and volume fraction. The simulations allow us to examine how the orientation of the rods differs with the distance from the container walls, which gives greater insight to random rod packing.

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