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Entanglement and Relaxation of Liquid Crystal Shaped Granular Media[1] THERESA ALBON, The College of Wooster, Wooster OH 44691, WILDER IGLESIAS, ANTAL JAKLI, Kent State University, Kent OH 44240, SHILA GARG, The College of Wooster, Wooster OH 44691 — We studied the entanglement and relaxation of V-shaped, U-shaped, and rod-shaped granular media. Our experiment was modeled after Gravish et al.'s work [1]. A clear understanding on how these particles interact with each other on a macroscopic scale can help us model how microscopic liquid crystal molecules with similar shapes behave. In order to entangle the granular media, the particles were subjected to a sinusoidal acceleration within a confined cylinder. Once entangled the cylinder was removed to leave a freestanding column, which was then accelerated at various 'g forces' to untangle and cause a collapse. Video recordings of the experiment were used to analyze the dynamics of packing and collapse. The U-shaped granular media took a longer time to relax in comparison with the rod-shaped and V-shaped granular media. We conclude that this is because the U-shaped granular media had 90° angles, which allowed the particles to latch on to each other better than the rod-shaped and the V-shaped particles. [1] N. Gravish, S. Franklin, D. Hu, D. Goldman, Phys. Rev. Lett., 108, 208001 (2012).

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Shila Garg
The College of Wooster, Wooster OH 44691

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