

Abstract Submitted
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Shearing and compression of elliptical particles¹ SOMAYEH FARHADI, ROBERT BEHRINGER, Duke University — We have performed 2D biaxial shearing and compression experiments for elliptical photoelastic particles in order to understand the effect of particle shape on microscopic and macroscopic properties of a granular system. The shearing experiment was conducted via a series of small forward and reverse steps using pure shear. We study the evolution of particle orientations and the average number of contacts following each step of shear or compression. Using photoelastic particles enables us to visualize the stress state of the system at the particle scale level. The ongoing analysis addresses the statistical properties of jammed state, including jamming that is reached through compression or through shear.

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