

Abstract Submitted
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Acoustic measurements in sheared granular materials THEODORE BRZINSKI, KAREN DANIELS, North Carolina State Univ — Acoustic measurements in static, jammed granular materials have revealed an excess of low-frequency vibrational modes which decreases as the confining pressure is increased. This behavior may be analogous to the excess in low-frequency modes associated with the loss of rigidity in molecular and colloidal glasses. To test this analogy, we measure the acoustic emissions from jammed, quasi-2D granular packings under shear. In contrast to static experiments, shear enables direct comparison of acoustic properties as a packing approaches failure. We use a split-bottom geometry with flexible boundaries held under controlled tension, allowing experiments to be conducted at a set confining pressure.

Theodore Brzinski
North Carolina State Univ

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