Abstract Submitted
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Discrete and Continuum Modeling of Energy Transport through Dense Granular Matter[1] LOU KONDIC, New Jersey Institute of Technology, ROBERT BEHRINGER, Duke University — The transport of stress and energy through dense granular matter (DGM) is of significant importance to a number of applications. Although a significant amount of work has been carried out in order to understand this process, there are still many unknowns, including lack of a generally accepted continuum model, or even lack of understanding of whether such a model should exist. With the goal of making a step towards answering these questions, we carry out large-scale discrete element simulations of DGM exposed to perturbations whose spatial and temporal characteristics are varied independently. The presentation will concentrate on the comparison between the results of the simulations, and of a relatively simple continuum model based on elastic response with damping. This comparison is expected to serve as a basis for further development of continuum models for energy transport through DGM.

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