

# MECHANICS OF MANY-BODY (FRICTIONAL) CONTACT IN (AND FOR) GRANULAR RHEOLOGY AND ELASTICITY

Speaker

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## Abstract

Granular media has long been an important material system for multiple disciplines, from as fundamental as (geo) physics to as applied as (civil) engineering. More recently, it also started to receive growing interest from the material science community. In this talk, we discuss how the same small-scale contact process connects to different large-scale mechanical properties -- specifically rheology (a more fluid-like concept) and elasticity (a more solid-like concept) -- of different types of granular media ranging from (as "conventional" as) glass beads to (as "exotic" as) catenated frames. Based on these studies, we also discuss various exciting future opportunities for (granular) physics, (computational) mechanics, as well as (advanced) manufacturing.

## Biography

Liuchi Li is an assistant professor of CEE at Princeton (since January 2025). He has a keen interest in understanding how the mechanics of (many-body) contact, friction, and fracture shape the emergent (nonlinear) behaviors of various complex material systems. He obtained his Ph.D. and M.S. from Caltech and his B.S. from Tongji University. Before joining Princeton, he spent a few years at Berkeley Lab, Hopkins, and EPFL as a postdoc and a visiting professor. He is the recipient of the 2025 Mechanics of Materials Early Career Award from Elsevier, as well as the 2022 Thomas JR Hughes Fellowship from the US National Congress for Theoretical and Applied Mechanics (USNC/TAM).



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**Room 3598 (Lift 27/28),  
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