

Abstract Submitted
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Particle Rearrangements in Fluctuating Disordered Solids¹ QIKAI WU, Yale University, THIBAUT BERTRAND, Laboratoire Jean Perrin, Université Pierre et Marie Curie, COREY O'HERN, Yale University, MARK SHATTUCK, City College of the City University of New York — We numerically study the evolution of interparticle contact networks in packings of frictionless bidisperse disks that interact via purely repulsive contact forces as a function of increasing temperature. We start with mechanically stable packings at zero temperature generated using an isotropic compression protocol. After each small increase in temperature, we run constant energy simulations for a given amount of time. At each temperature, we measure the average and variance in the particle positions as a function of time to identify particle rearrangements. In addition, we rapidly re-quench configurations from the constant energy simulations to zero temperature to determine when the system switches from one mechanically stable packing to another. From these simulations, we will better understand the organization and structure of mechanically stable disk packings in configuration space.

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