

Abstract Submitted
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Surface Growth of Locally Rigid Clusters Approaching Jamming and Rigidity Percolation MICHAEL VAN DER NAALD, ERIC CORWIN, University of Oregon — The jamming transition is defined by rigidity: at jamming every non-rattler particle belongs to a single, system spanning, rigid cluster. At densities below jamming no particle is rigid but, dependent on the packing protocol, particles can still accumulate into clusters. To investigate these clusters we define the notion of a locally rigid cluster. A cluster of particles is called locally rigid if it becomes rigid when all of the clusters neighbors are held fixed. By simulating two dimensional athermal soft discs at various packing fractions we can measure the size and surface properties of these locally rigid clusters. We draw the analogy to surface growth processes by considering packing fraction as a time-like quantity. We demonstrate different growth regimes as a function of packing fraction and comment on their relation to established surface growth models.

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