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Critical Scaling at the Jamming Transition for Zero and Finite Applied Shear Stress[1] PETER OLSSON, Umea University, STEPHEN TEITEL, University of Rochester — We carry out numerical simulations to study the jamming transition of a model granular material in two dimensions at zero temperature. Behavior is simulated as a function of particle density and applied shear stress. We find a collapse of our data to scaling curves that provides evidence for a sharp 2nd order jamming transition in non-equilibrium steady states at finite shear, that ends at a critical point (point "J") as the shear stress vanishes. We estimate the values of the critical exponents at both zero and finite shear stress.

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