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Critical Scaling of Shearing Rheology at the Jamming Transition of Soft Core Frictionless Disks[1] STEPHEN TEITEL, University of Rochester, PETER OLSSON, Umeå University — We perform numerical simulations to determine the shear stress and pressure of steady-state shear flow in a soft-disk model in two dimensions at zero temperature in the vicinity of the jamming transition ϕ_J. We use critical point scaling analyses to determine the critical behavior at jamming, and we find that it is crucial to include *corrections to scaling* for a reliable analysis. We find that the relative size of these corrections are much smaller for pressure than for shear stress. We furthermore find a superlinear behavior for pressure and shear stress above ϕ_J, both from the scaling analysis and from a direct analysis of pressure data extrapolated to the limit of vanishing shear rate.

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