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Pressure Distribution and Critical Exponent in Statically Jammed and Shear-Driven Frictionless Disks[1] STEPHEN TEITEL, Univ of Rochester, DANIEL VÅGBERG, Umeå University, YEGANG WU, Univ of Rochester, PETER OLSSON, Umeå University — We numerically study the distributions of global pressure that are found in ensembles of statically jammed and quasistatically sheared systems of bidisperse, frictionless, disks at fixed packing fraction ϕ in two dimensions. We use these distributions to address the question of how pressure increases as ϕ increases above the jamming point ϕ_J, $p \sim |\phi - \phi_J|^y$. For statically jammed ensembles, our results are consistent with the exponent y being simply related to the power law of the interparticle soft-core interaction. For sheared systems, however, the value of y is consistent with a non-trivial value, as found previously in rheological simulations.

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