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Finite-Size-Scaling at the Jamming Transition: Corrections to Scaling and the Correlation Length Critical Exponent[1] STEPHEN TEITEL, University of Rochester, DANIEL VÅGBERG, Umeå University, DANIEL VALDEZ-BALDERAS, MICHAEL MOORE, University of Manchester, PETER OLSSON, Umeå University — We carry out a finite size scaling analysis of the jamming transition in frictionless bi-disperse soft core disks in two dimensions. We consider two different jamming protocols: (i) quench from random initial positions, and (ii) quasistatic shearing. By considering the fraction of jammed states as a function of packing fraction for systems with different numbers of particles, we determine the spatial correlation length critical exponent $\nu \approx 1$, and show that *corrections to scaling* are crucial for analyzing the data. We show that earlier numerical results yielding $\nu < 1$ are due to the improper neglect of these corrections.

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