

Abstract Submitted
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Investigating Jamming percolation using renormalization group methods SAMUEL SCHOENHOLZ, AMY BUG, Swarthmore College, ANDREA LIU, University of Pennsylvania — We develop renormalization group-based methods to determine the percolation threshold and exponents for jamming-percolation models. Such models exhibit mixed phase transitions in finite dimensions, with a discontinuous jump in the order parameter and an exponentially diverging length scale: $\xi \approx \exp(|p - p_c^\infty|^\mu)$, where p_c^∞ marks the percolation transition for the infinite system. To extract p_c^∞ we use a Monte-Carlo scheme to find $p_c(L)$ for increasing L and extrapolate to $L \rightarrow \infty$. We investigate several models in two dimensions to test for universality of the exponent μ .

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