Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

**Force correlations near point J in a lattice model of jamming**
SCOTT MILNER, JILLIAN NEWHALL, Penn State University — We have constructed a lattice model of a jammed system in $d = 2$ dimensions near the isostatic point (Point J). Adapting the Tighe model, we represent a jammed pack of particles as a regular hexagonal array, with repulsive forces between nearest neighbors. We generate near-isostatic jammed configurations by carrying out a Monte Carlo simulation with Tighe "wheel moves", which rearrange forces locally while preserving force balance on every particle. (Wheel moves correspond to a small dilation of a given particle.) The MC simulation is progressively biased towards the creation of "missing contacts", bonds which bear zero force. We reveal long-range correlations in the force network near Point J by determining for each particle the smallest "collective move" — a set of wheel moves that taken together dilates the given particle, while preserving the existing missing contacts. The size of these collective moves diverges as Point J is approached.

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Date submitted: 19 Nov 2010 Electronic form version 1.4