

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**A toy spin model for jammed solids** SHILİYANG XU, XAVIER ILLA, J.M. SCHWARZ, Physics Department, Syracuse University — Experiments and simulations demonstrate a heterogeneous force network in jammed/amorphous solids. We look for correlations in the force network for a system of soft, repulsive spheres near the onset of jamming by, for example, measuring the contact angle distribution as a function of contact force. We find a peak in this distribution at larger angles for larger contact forces. We couple this information with contact number information of the jammed configurations to construct a Potts spin model with both ferromagnetic and antiferromagnetic interactions in which the strongly interacting spins create a backbone in a sea of more weakly interacting spins. We use this backbone to generate an effective one-dimensional Potts spin glass with long-range interactions whose properties we then study in order to draw connections between spin glasses and jammed solids.

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Date submitted: 20 Nov 2009

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