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Probing the relation between structural glasses and 3-spin spin glasses using one-dimensional models DEREK LARSON, Physics Dept., University of California Santa Cruz, Santa Cruz CA 95064, HELMUT G. KATZGRABER, Theoretische Physik, ETH Zurich, 8093 Zurich, Switzerland; Department of Physics, Texas A&M University, College Station, TX 77843-4242, A.P. YOUNG, Physics Dept., University of California Santa Cruz, Santa Cruz CA 95064 — Motivated by a proposed connection between 3-spin spin glasses and structural glasses, we have performed Monte Carlo simulations on a one-dimensional long-range Ising glass with power-law interactions involving 3-spins. Varying the exponent of the power-law interactions is analogous to changing the space dimension of a corresponding short-range 3-spin model. We present results of a finite-size scaling analysis of the two-point correlation length, and compare our results with the prediction of Moore and Yeo that the three-spin model is in the same universality class as an Ising spin glass in a magnetic field.

Peter Young
University of California Santa Cruz

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