Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Noise at the Wigner Glass Transition and Implications for the 2D Metal-Insulator Transition CHARLES REICHHARDT, CYNTHIA OLSON REICHHARDT, Los Alamos — Using a simple model for interacting electrons with random disorder in two dimensions, we show in simulations that a transition from a Wigner liquid to a Wigner glass occurs as a function of electron density. The conduction noise power increases strongly at the crossover and the characteristics of the $1/f^{\alpha}$ noise change. When the temperature is increased, the noise power decreases. We compare these results with recent noise measurements in systems with two-dimensional metal-insulator transitions. [1] C. Reichhardt and C.J. Olson Reichhardt, PRL 93, 176405 (2004).

Charles Reichhardt
Los Alamos

Date submitted: 05 Dec 2004 Electronic form version 1.4