

1125-VP-2631 **Peter Otto, Benjamin Savoie*** (bsavoie@umflint.edu), **Ana Wright** and **Renjun Zhu**.

Mixing Times for a Generalization of the Curie-Weiss Model via Aggregate Path Coupling.

The classical Curie-Weiss (CW) model is the mean-field version of the famous Ising model of statistical mechanics. The model exhibits a second-order, continuous equilibrium phase transition with respect to the magnetization. The mixing time for the Glauber dynamics of the classical CW model has been shown to undergo a transition from rapid to slow mixing at precisely the equilibrium phase transition critical value. In this talk, we present mixing time results for a generalized Curie-Weiss model that exhibits a first-order, discontinuous equilibrium phase transition. We show how the standard path coupling technique fails in this case and how the new method of aggregate path coupling can be applied to determine the mixing time transition value, which is strictly less than the equilibrium phase transition critical value. (Received September 20, 2016)