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Dynamic Heat Capacity of the East Ising Model JONATHAN BROWN, JOHN MCCOY, BRIAN BORCHERS, New Mexico Institute of Mining and Technology, DOUGLAS ADOLF, Sandia National Laboratories — It has been shown in experiment that the heat capacity of glass formers has a frequency dependence, this is called the dynamic heat capacity. The dynamic heat capacity for a simple spin model known to be a glass former, the east Ising model, is measured by simulation. The result shows stretched exponential decay like relaxation, and the data is fit to the appropriate form. For low temperatures, the relaxation time grows proportionally to exponential inverse temperature squared, which is the theoretical low temperature limit. Another model is applied where the overall relaxation is made up of the relaxations of subdomains that each have their own characteristic times. Using Markov Chains, these times are computed numerically and symbolically, and the data is seen to fit the simulations very well in the low temperature limit. The dynamics of the east model are tracked very well by this procedure, and we compare this to the parameters of the stretched exponential fits showing that a discrete number of relaxation times can give rise to stretched exponential like behavior. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

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