

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Characteristic time scales and overlap distributions in replica exchange Monte Carlo simulations of spin glasses¹ BURCU YUCESOY, JON MACHTA, University of Massachusetts Amherst , HELMUT G. KATZGRABER, Department of Physics, Texas A & M University & ETH Zurich — We present a large-scale numerical study using replica exchange Monte Carlo (parallel tempering) of time scales of the three- dimensional Ising spin glass. We measure the integrated and exponential autocorrelation times for several observables, as well as the round-trip times for different disorder realizations in order to investigate the relationship between the characteristic time scales of a disorder realization and its overlap distribution.

¹Supported in part by NSF DMR-0907235.

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Date submitted: 27 Dec 2010

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