

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Disordered XYZ Spin Chain Simulations using the Spectrum Bifurcation Renormalization Group KEVIN SLAGLE, YI-ZHUANG YOU, CENKE XU, Univ of California - Santa Barbara — We study the disordered XYZ spin chain using the recently developed Spectrum Bifurcation Renormalization Group (SBRG) numerical method. With large disorder, the phase diagram of the eigenstates consists of three many body localized (MBL) spin glass phases separated by marginal MBL critical phases. We examine the critical phases of this model by probing the entanglement entropy and Edwards-Anderson spin glass order parameter. We also show how long-range mutual information can be used to distinguish these phases (Jian, Kim, Qi 2015).

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Date submitted: 03 Nov 2015

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