

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

DMRG study of Many-Body Localization XIONGJIE YU, BRYAN CLARK, University of Illinois, Urbana-Champaign, DAVID PEKKER, University of Pittsburgh — Numerical studies on many-body localization (MBL) problems have heavily relied on exact diagonalization (ED) techniques so far which has severely limited the system size that can be studied. Here we report a density matrix renormalization group (DMRG) based method for simulations in the many-body localized phase allowing us to reach system sizes inaccessible to ED. We describe our techniques and report on our results applying DMRG to larger systems.

Xiongjie Yu
University of Illinois, Urbana-Champaign

Date submitted: 14 Nov 2014

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