Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

**Dynamical Confinement-Deconfinement Transitions in Many-body Localized Topological Phases** BYUNGMIN KANG, University of California, Berkeley, SIDDHARTH A. PARAMESWARAN, University of California, ANDREW C. POTTER, University of Texas at Austin, ROMAIN VASSEUR, Lawrence Berkeley National Laboratory and University of California — Many-body localization (MBL) is a dynamical quantum phase of matter in which the properties of quantum many-body ground states can be extended to highly excited states in the presence of strong disorder. While the existence and the properties of such many-body localized phases are rather well understood in one dimension, much less is known in higher dimensions in which more exotic quantum orders can be realized. In this talk, I will discuss the role of disorder in topological-to-trivial quantum phase transitions in order to provide explicit examples of MBL-protected topological order in two dimensions. In particular, I will give a universal real-space renormalization picture of such phase transitions both at zero temperature and in highly excited states.

Byungmin Kang
Univ of California - Berkeley

Date submitted: 15 Nov 2016 Electronic form version 1.4