

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Continuous preparation of a fractional Chern insulator CHRISTOPHER LAUMANN, University of Washington, MAISSAM BARKESHLI, Microsoft Station Q, NORMAN YAO, University of California, Berkeley — We present evidence of a direct, continuous quantum phase transition between a Bose superfluid and the $\nu = 1/2$ fractional Chern insulator in a microscopic lattice model. In the process, we develop a detailed field theoretic description of this transition in terms of the low energy vortex dynamics. The theory explicitly accounts for the structure of lattice symmetries and predicts a Landau forbidden transition that is protected by inversion. That the transition is continuous enables the quasi-adiabatic preparation of the fractional Chern insulator in non-equilibrium, quantum optical systems.

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Date submitted: 14 Nov 2014

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