

Abstract Submitted
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Understanding the Emergence of Chiral Spin Liquids in Mott Insulators CIARAN HICKEY, University of Toronto, LUKASZ CINCIO, Los Alamos National Laboratory, ZLATKO PAPIĆ, University of Leeds, ARUN PARAMAKANTI, University of Toronto — There has been a resurgence of interest recently in chiral spin liquids (CSLs), topologically ordered states of matter with gapped semion excitations. A number of different $SU(2)$ invariant spin models have numerically been shown to harbor CSL ground states. However our understanding of how and why these states emerge is still lacking. One particularly intuitive mechanism is that these CSLs arise as “quantum-disordered” descendants of certain non-coplanar magnetic parent states. We will provide evidence supporting such a mechanism on a variety of 2-d lattice geometries, uniting many of the CSLs found so far under a common framework.

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