

Abstract Submitted
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Combined topological and Landau order from strong correlations in Chern bands¹ MARIA DAGHOFER, STEFANOS KOURTIS, IFW Dresden — In recent years, topologically nontrivial and nearly dispersionless bands have attracted attention as hosts for states analogous to fractional quantum-Hall states, but without a magnetic field. Indeed, such fractional Chern insulators were found and connections to fractional quantum-Hall states in Landau levels were established. We discuss here aspects where fractional Chern insulators differ from Landau levels. In particular, we present a class of states where both topological order and symmetry breaking arise spontaneously: the states show both fractional Hall conductivity and charge order. This coexistence of topological and conventional Landau order relies on the geometric frustration of the underlying lattice and consequently goes qualitatively beyond physics found in continuous Landau levels with their weak lattice. [1] S. Kourtis, J. W. F. Venderbos and M. Daghofer, PRB **86**, 235118 (2012); S. Kourtis and M. Daghofer, arXiv:1305.6948.

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