

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Multi-layer fractional quantum Hall states in lattice systems

LAYLA HORMOZI, Department of Mathematical Physics, National University of Ireland — We study fractional quantum Hall states of interacting particles in lattice systems subject to external magnetic fields. When the number of flux quanta per lattice plaquette is close to a rational fraction, the lowest energy states can be mapped to degenerate lowest Landau levels in the continuum, where particles carry an extra degree of freedom – a pseudospin or layer-index. We find a class of multi-layer fractional quantum Hall states that can form in these systems with different inter- and intra-layer interactions and show that topological and spectral properties of these states can be derived from different conformal field theories that are related by a condensation/orbifolding mechanism.

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Date submitted: 15 Nov 2013

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