Abstract

Condensed Matter

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The Topology of Mobility-Gapped Insulators

Studying deterministic operators, we define an appropriate topology on the space of mobility-gapped insulators such that topological invariants are continuous maps into discrete spaces, and we prove that this is indeed the case for the integer quantum Hall effect. That is, we show the Chern number is continuous w.r.t. deterministic deformations of the Hamiltonian, in strong localization that closes the spectral gap. Lastly we show why our "insulator" condition makes sense from the point of view of the localization theory using the fractional moments method.