

Abstract

Insulating phases of matter can be distinguished by non-trivial topological invariants. A striking feature arises when two insulators with distinct invariants are joined: conducting states emerge along their interface - a phenomenon known as the qualitative bulk-edge correspondence (BEC). In this talk, we investigate BEC for Fermionic time-reversal-invariant insulators, characterized by a \mathbb{Z}_2 -valued Fu-Kane-Mele index, with particular attention to curved interfaces. In this talk, I will begin with discussions on bulk-edge correspondence for Chern insulators, and highlight the differences when generalizing to \mathbb{Z}_2 -insulators.