

Topological insulators and scattering theory

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Abstract: Hatsugai gave a seminal treatment of bulk-edge duality for Quantum Hall systems. We shall reinterpret the duality in terms of Levinson's theorem of scattering theory and illustrate it pictorially. Kane, Mele and Fu gave definitions of the index of time-reversal invariant topological insulators in terms of Pfaffians. We reformulate them otherwise and in a way which proves useful for the understanding of bulk-edge duality.