

Interaction Effects in Topological Materials

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Topological Insulators are a new phase of electronic matter which realizes a non-quantum-Hall-like topological state in the bulk matter and unlike the quantum Hall liquids can be turned into superconductors at the bulk and/or at the interface. I will first review the basic concepts defining topological matter and experimental probes that reveal topological order. I will then present recent results demonstrating interaction effects in topological materials including superconductivity, magnetism and Kondo physics. Time permitting, I will also briefly present experimental results on a new class of topological insulators beyond the Kane-Mele Z_2 theory and discuss interaction effects in them.

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