

Materials Science and Technology Division
Materials Theory Group

“Interacting topological insulators in oxides”

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Abstract

Topological phases of matter have received intense interest over the past few years due to the experimental discovery of time-reversal invariant topological insulators (TI) in two and three dimensions. To date, the materials where TI have been reported are weakly interacting and most (if not all) have been previously predicted with simple band theory or density functional theory. The fate of TI in the presence of interactions remains an open area of theoretical and experimental study. In this talk, I will describe some of our theoretical efforts directed at the discovery and understanding of interacting topological phases in real materials. Some of the most promising platforms for experimental realization of these phases are transition metal oxides and heterostructures derived from them.

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