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*Strongly interacting topological phases of matter*

The discovery of topological band insulators in the mid-2000s, recognized in part by the 2016 Nobel Prize in Physics, has revolutionized condensed matter physics. In these materials, global properties of the quantum wavefunction are characterized by nontrivial topological invariants which distinguish homotopy classes of maps from momentum space to spaces of single-particle quantum Hamiltonians. This description however ignores interparticle interactions such as the electrostatic repulsion between electrons, which is nonetheless present in real materials. While weak interactions are not expected to significantly affect the topological classification of quantum materials, strong interactions have the potential to lead to novel topological phases beyond topological band insulators. In this talk I will discuss two examples of strongly interacting topological phases in 2+1 dimensions: a topologically nontrivial antiferromagnetic phase, and a symmetry-protected topological phase of fermions with no free-fermion counterpart.