
XIE CHEN, California Institute of Technology

Group Cohomology and Symmetry Protected Topological Phases

The mathematical concept of Group Cohomology has recently played an important role in condensed matter physics, in the study of Symmetry Protected Topological Phases. In this talk, I am going to discuss the development in this field. In particular, I am going to discuss how group cocycles can be used to construct condensed matter models with global symmetry and how nontrivial group cocycle leads to models with nontrivial physical effect when the system is placed on a manifold with boundary. Open questions and future directions are also discussed.