

A Case Study in Non-Commutative Topology

Claude Schochet, Wayne State University

Non-commutative topology uses the tools of C^* -algebras and algebraic topology to study phenomena from classical topology, geometry, functional analysis, and physics. In this talk we show how the same C^* -algebra arises from quantum mechanics, rotations of the circle, and a flow on a torus. We then demonstrate how it is possible to retrieve information from the model using K-theory for C^* -algebras. This is the opposite of a survey talk: the focus will be exclusively upon one example. No knowledge of C^* -algebras or K-theory will be assumed.

This talk is G -rated and intended for students.