

The structure of tensor categories from 3-dimensional topology

Abstract:

Fusion tensor categories arise in many areas of mathematics: as representation categories for finite quantum groups, certain Hopf algebras, and loop groups; as the "basic invariants" of subfactors of von Neumann algebras in the theory of operator algebras; and also in the study of conformal field theory. Fusion tensor categories have a rich and fascinating structure. The goal of this talk will be to describe how higher categories allow this structure to be understood and explained using 3 dimensional topology and 3 dimensional topological field theory. There are also connections to Jacob Lurie's work on the cobordism hypothesis. This is joint work with Christopher Douglas and Noah Snyder.

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