

Abstract

Modular Categories and Applications I

Modular categories appear as the algebraic framework in a number of mathematical and physical settings. I will introduce modular categories and some of their connections to condensed matter physics, low-dimensional topology, Hopf algebras and quantum computation. With these applications in mind, we have been working on the classification of modular categories. This has led to some conjectures – both structural and enumerative – which I will describe. This is based on joint work with Zhenghan Wang, Michael Larsen, Sarah Witherspoon, Deepak Naidu and others.