

What do knots, quantum computation and field theories have in common?

Thursday, 20 December 2018 09:00 (20 minutes)

Knots are deceptively simple mathematical objects. Showing whether two knots are the same or not is a hard problem. While it can be done easily by inspection for simple knots, the problem becomes hard very quickly. Ideally, to distinguish between inequivalent knots we have to define knot invariants. At first sight, this may not have anything to do with quantum computation or field theories. However, it turns out that these subjects are intimately related to each other through an algebraic object called a modular tensor category (MTC). In this talk, I will describe an MTC and explain how it forms the bridge between the aforementioned topics.

Primary author: Mr RADHAKRISHNAN, Rajath (Queen Mary University of London)

Presenter: Mr RADHAKRISHNAN, Rajath (Queen Mary University of London)