



The Math/Stats Colloquium
Department of Mathematics and Statistics
San José State University



Julia Plavnik

Indiana University Bloomington

*Mathematics of Topological Quantum
Computation*

MAY 11, 2020, VIA ZOOM

Abstract: In the last years, the possibility of constructing a quantum computer has gotten a lot of attention. There are different models and perspectives about it, one of them has a topological nature which has the advantage to be protected against decoherence. In this talk, we will introduce the notion of a modular tensor category, which is a rich mathematical structure that models 2-dimensional topological phases of matter, which are a route to topological quantum computation. To get a better understanding of these categories, we will present some important examples, properties, and invariants associated to them.

Background: Linear algebra. One semester abstract algebra would be helpful but is not required.

About the speaker: Julia Plavnik received her Ph.D. from Universidad Nacional de Córdoba, Argentina and is the Charlotte Ann Griffin Assistant Professor in the Department of Mathematics at Indiana University. Her current research is in quantum symmetries.

COLLOQUIUM BROADCAST VIA ZOOM, 3PM PACIFIC/6PM EASTERN
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<http://www.timhsu.net/colloq/>