

Algebra/Topology Seminar

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ROBOTIC KNOT TYING

Thursday, November 17, 2016

1:15 p.m. in ES-143

ABSTRACT. Knots are families of complex string structures. It is very challenging to tie them using robots, considering the complexity of the interweaving string structures, and the fact that the deformation of the strings is hard to detect and control.

In this talk, I will discuss how to use robots to tie knots. Instead of focusing on the geometry of the knots, we will focus on manipulating strings to form the desired number of crossings in the correct order. We change the geometry of the knots to simplify the manipulations based on the available physical resources, while maintaining the desired number and ordering of the crossings.