

The Slope Conjecture

Stavros Garoufalidis

The Slope Conjecture relates a quantum knot invariant, (the degree of the colored Jones polynomial of a knot) with a classical one (boundary slopes of incompressible surfaces in the knot complement). We will discuss how to produce slopes of incompressible surfaces in the knot complement via an incompressibility criterion (joint with Nathan Dunfield) and how to compute the degree of the colored Jones polynomial using quadratic integer programming (joint with Roland van der Veen). The combination of these approaches prove the Slope Conjecture for all 2-fusion knots.