

Knots and surfaces

Abstract:

Knots and surfaces play a central role in low-dimensional topology, as an object of study in themselves as well as a tool for studying 3- and 4-manifolds. To this end various kinds of algebraic invariants have been developed. While the classical Alexander polynomial is firmly rooted in algebraic topology, the Jones polynomial and other quantum invariants are more combinatorial in nature, whence their topological interpretation is more difficult and less understood. In this talk I will discuss geometric properties of knots and surfaces, such as ribbon and slice surfaces, and their algebraic consequences.

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