ERIC HARPER, McMaster University

Virtual knots, almost classical knots, and their Alexander invariants

Algebraic invariants of virtual knots such as the knot group and the augmented knot group carry intrinsic topological information about the knot. We can use Alexander invariants to help extract that information from the group structure. In virtual knot theory two augmented knot groups arise naturally, we will show that they are isomorphic.

Virtual knots that admit virtual knot diagrams that have Alexander numberings are called almost classical knots. Almost classical knots share many similarities with classical knots. For almost classical knots, the augmented knot group is determined by the classical knot group. By Nakamura et al., the first elementary ideal of the knot group for almost classical knots is principal. This leads us to define the Conway potential function for almost classical knots. Using techniques from virtual knot theory and Green's knot table, we tabulate almost classical knots up to six crossings.