

Oberseminar Geometrie
Department of Mathematics
University of Fribourg
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Concordance of positive 3-braid knots and a knot homology invariant

Classical knots are smooth embeddings of the (oriented) circle \mathbb{S}^1 into \mathbb{R}^3 (or into the 3-sphere), usually studied up to an equivalence relation called (ambient) isotopy. The concept of "sliceness" is a (natural) generalization in dimension 4 of the question whether certain knots are isotopic to the trivial knot (the unknot). The notion of sliceness leads to a second equivalence relation on the set of knots called concordance. Isotopic knots are concordant, but the converse is in general not true as any nontrivial slice knot shows.

In the talk, we will define the relevant terms and discuss the following question: Are concordant positive 3-braid knots isotopic? We will explain why one could believe the answer to be yes and how knot homology invariants could help to answer this question.