

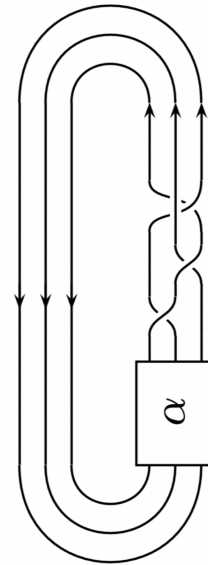
Oberseminar Geometrie

Department of Mathematics

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Braids on three strings of maximal four-genus

When we look at surfaces embedded in four-dimensional space, regularity (smooth/topological) of the embedding matters: The minimal genus of surfaces in the four-dimensional ball with a prescribed knot as their boundary does not only depend on the knot but also on the regularity of the surface's embedding. Four decades after this discovery, which goes back to Rudolph and to the celebrated work of Freedman, the discrepancy between smooth and topological remains difficult to characterize and to quantify; for example the topological four-genus of torus knots is largely unknown to date.

I would like to present a classification of knots obtained as the closures of braids on three strings whose topological four-genus is maximal (that is, equal to their classical genus). For the remaining braids on three strings, we have bounds and some precise calculations.

This reports on a project with S. Baader, L. Lewark, and P. Truöl.