Surface bracket polynomial and supporting genus of virtual knots

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Abstract

Non-triviality of Kishino's (virtual) knot cannot be proved by the fundamental group, the Kauffman bracket polynomial (the Jones polynomial) and the Sawollek polynomial. T. Kishino proved its non-triviality by the 3-strand bracket polynomial. T. Kadokami showed that the supporting genus of flat Kishino's knot is two. This means Kishino's knot is non-classical. H. A. Dye and L. Kauffman defined the *surface bracket polynomial* for virtual links. We talk about this invariant. The invariant detects non-classicality of many virtual knots including Kishino's knot whose bracket polynomials are trivial, and the supporting genus of some virtual knot can be determined by the invariant.

References

[1] H. A. Dye and L. H. Kauffman, *Minimal surface representations of virtual knots and links,* math.GT/0401035.