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RECURSION OF THE JONES POLYNOMIAL ON TWO-BRIDGE KNOTS

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Abstract of Report Talk: The Kauffman bracket and the Jones polynomial are polynomials defined on knot diagrams. The Kauffman bracket is invariant under type II and III Reidemeister moves. The Jones polynomial, a modification of the Kauffman bracket, is invariant under type I, II and III Reidemeister moves.

Two-bridge knots are a family of knots defined by the 2-plat closure of a 3 braid. Any two-bridge knot can be represented as $[a_1, a_2, \dots, a_n]$ where each a_i is an integer.

By studying the effects of both A and B smoothings of a crossing of a generic two-bridge knot, I developed recursive formulae for the Kauffman bracket of two-bridge knots. The formulae reduce the Kauffman bracket of any two-bridge knot to that of a two-bridge knot with fewer crossings, thus reducing every two-bridge knot to the unknot.

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