On knots with no 3-state

Shin Satoh

Kobe University

Abstract. Kauffman introduces the state model for a Jones polynomial, where the number of circles in each state is an important quantity. For a positive integer $k$, a $k$-state of a (classical or virtual) knot diagram is such a state consisting of $k$ circles. It is easy to see that any non-trivial diagram has 1- and 2-states both. In this talk, we determine knot diagrams with no 3-states via Gauss diagrams, and give several properties related to the integer-writhe, upper and lower knot groups, and Miyazawa polynomials.