On the first two Vassiliev invariants of torus knots

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概要

We consider $\mathbb{R}$-valued Vassiliev invariants of degree 2 and 3 respectively normalized on condition that we take values 0 on the unknot and 1 on a trefoil. We give a cubic curve related to Vassiliev invariants of degree 2 and 3 for any n-crossing diagram of torus knots. Moreover, we show that for any n-crossing diagram of torus knots, the Vassiliev invariant of degree 3 divided by the cubic n is from -1/24 to 1/24 (S.Willerton Conjecture).