

On unknotting fibered positive knots and braids

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Abstract. The unknotting number u and the genus g of braid positive knots are equal, as shown by Rudolph. We prove the stronger statement that any positive braid diagram of a genus- g knot contains g crossings such that changing them produces a diagram of the trivial knot. Then, we turn to unknotting the more general class of fibered positive knots, for which $u = g$ was conjectured by Stoimenow. We prove that the known ways to unknot braid positive knots do not generalize to fibered positive knots. Namely, we prove that there are fibered positive knots that cannot be unknotted optimally along fibered positive knots; there are fibered positive knots that do not arise as trefoil plumbings; and there are positive diagrams of fibered positive knots of genus g that do not contain g crossings such that changing them produces a diagram of the trivial knot. In fact, we conjecture that one of our examples is a counterexample to Stoimenow's conjecture.

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