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Tabulation of flat knots

Virtual knots were introduced by Kauffman, and they represent knots in thickened surfaces up to stable equivalence. Each virtual knot determines a flat knot, which is the homotopy class of the immersed curve in the surface. In this talk, I will discuss a project for tabulating flat knots that is based on an approach pioneered by Turaev. I will discuss the algorithm and challenges of implementing it for flat knots. Prior work of Gibson gave a tabulation of flat knots up to 4 crossings, and our results extend this to flat knots up to 8 crossings. I will also discuss how to use various different invariants of flat knots, such as their based matrices and arrow polynomials, to distinguish the different equivalence classes. This talk represents joint work with L. White.