Reframing Lisa Piccirillo Paper about the Conway Knot

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Abstract

It is sometimes the case that a mathematical knot which cannot be untied in three dimensions can be untied in four. If a knot can be untied in four dimensions, it is called slice. All slice knots up to 13 crossings (thousands of which exist!) have been classified, besides the Conway knot. In 2019, Lisa Piccirillo solved this decades-old problem. This talk will explore Piccirillo's proof that the Conway knot is not slice, introduce Kirby Calculus-- the main tool used in this proof, and offer a new framework for exploring slice knots.