

Knot Floer homology detects genus-one fibred knots

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Ozsváth and Szabó conjectured that knot Floer homology detects fibred knots. We propose a strategy to approach this conjecture based on Gabai's theory of sutured manifold decomposition and contact topology. We implement this strategy for genus-one knots and links, obtaining as a corollary that if rational surgery on a knot K gives the Poincaré homology sphere $\Sigma(2, 3, 5)$, then K is the left-handed trefoil knot.