Twisted Alexander invariants detect trivial links
Stefan Friedl and Stefano Vidussi

Abstract. It follows from earlier work of Silver–Williams and the authors that twisted Alexander polynomials detect the unknot and the Hopf link. We now show that twisted Alexander polynomials also detect the trefoil and the figure-8 knot, that twisted Alexander polynomials detect whether a link is split and that twisted Alexander modules detect trivial links. We use this result to provide algorithms for detecting whether a link is the unlink, whether it is split and whether it is totally split.