Effective computation of the multivariable Alexander polynomial, genus and trip number of Lorenz links

Nuno Franco (CIMA-UE and Department of Mathematics, University of Évora)

Luís Silva (CIMA-UE and Department of Mathematics, University of Évora)

July 17, 2008

Abstract

Given two different representations of a Lorenz link, we compare how they affect the computation of the multivariable Alexander polynomial. We also compare the Alexander polynomial with the trip number and genus. Our experimental results lead us to conjecture that, for Lorenz knots, the Alexander polynomial is an equivalent invariant to the pair (trip number, genus). Finally we give a counterexample in the case of Lorenz links.

Keywords: Alexander Polynomial; genus; trip number; Lorenz knots