

Lecture 6. Problems

June 5, 2022

1 Research problems

1. Construct a 2-variable (multivariable) analogue of the Conway/Alexander polynomial for long knots which uses different structures at crossings with early overpass and crossings with early underpass and *detects the knot invertibility*.
2. Lisa Piccirillo recently proved that **the Conway knot is not smoothly slice** and formulate a problem:
Find a purely combinatorial proof (without reference to 4-dimensional topology that the Conway knot is not topologically slice).