Intersections of Virtual Multistrings
David Freund

Abstract

Flat virtual links can be described combinatorially and geometrically, and we use the interplay between these perspectives to develop methods that compute the minimal number of crossings for a flat virtual link. We generalize Turaev's based matrix from flat virtual knots to all flat virtual links via woven based matrices, thereby constructing a collection of invariants for flat virtual links. We also show that, for a large family of flat virtual links, crossing-irreducible representatives are related by moves that preserve the number of crossings and there exist geometric representatives of these links minimizing both genus and the number of crossings.