Intersections of Virtual Multistrings
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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.