Linear Chord Diagrams With Long Chords
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Abstract

A linear chord diagram of size n is a partition of the first $2n$ integers into sets of size two. These diagrams appear in many different contexts in combinatorics and other areas of mathematics, particularly knot theory. We explore various constraints that produce diagrams which have no short chords. A number of patterns appear from the results of these constraints which we can prove using techniques ranging from explicit bijections to non-commutative algebra.