Título: Quadratic Isoperimetric Inequality For Mapping Tori Of Free Group Automorphisms,

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The authors prove that if F is a finitely generated free group and \phi is an automorphism of F then F\rtimes_\phi\mathbb Z satisfies a quadratic isoperimetric inequality.

The authors' proof of this theorem rests on a direct study of the geometry of van Kampen diagrams over the natural presentations of free-by-cylic groups. The main focus of this study is on the dynamics of the time flow of t-corridors, where t is the generator of the \mathbb Z factor in F\rtimes_\phi\mathbb Z and a t-corridor is a chain of 2-cells extending across a van Kampen diagram with adjacent 2-cells abutting along an edge labelled t. The authors prove that the length of t-corridors in any least-area diagram is bounded by a constant times the perimeter of the diagram, where the constant depends only on \phi. The authors' proof that such a constant exists involves a detailed analysis of the ways in which the length of a word $w\in F can grow and shrink as one replaces w by a sequence of words w_m, where w_m is obtained from \phi(w_{m-1}) by various cancellation processes. In order to make this analysis feasible, the authors develop a refinement of the improved relative train track technology due to Bestvina, Feighn and Handel.

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