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Manhattan curves and automorphisms of free groups

Richard SHARP
Department of Mathematics
University of Manchester
Oxford Road
Manchester, M13 9PL
UNITED KINGDOM

`sharp@maths.man.ac.uk`

Abstract

Given two compact hyperbolic surfaces, one may associate a “Manhattan curve” from which one may recover various numerical comparisons of the surfaces: max and min geodesic stretch, intersection and the growth of the number of freely homotopic closed geodesics with approximately the same length. We discuss a similar object associated to an automorphism of a free group and describe how it relates to various characterizations of distortion.