Geometric and Asymptotic Group Theory with Applications 2016

Jason Behrstock

Lehman College, CUNY

Asymptotic dimension of mapping class groups

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2:20 PM

Abstract:
The goal of this talk will be to describe our recent result proving that the asymptotic dimension of the mapping class group of a closed surface is at most quadratic in the genus (building on and strengthening a prior result of Bestvina-Bromberg giving an exponential estimate). We obtain this result as a special case of a result about the asymptotic dimension of a general class of spaces, which we call hierarchically hyperbolic; this class includes hyperbolic spaces, mapping class groups, Teichmuller spaces endowed with either the Teichmuller or the Weil-Petersson metric, fundamental groups of non-geometric 3-manifolds, RAAGs, etc. We will discuss the general framework and a sketch of how this machinery provides new tools for studying special subclasses, such as mapping class groups. The results discussed are joint work with Mark Hagen and Alessandro Sisto.