

A RANDOM CLOSED GEODESIC IN HYPERBOLIC MANIFOLDS IS SIMPLE

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Abstract:

In this talk, I will explain how to study simple closed geodesics in hyperbolic manifolds using dynamical methods. Here, a closed geodesic is simple if it has no self-intersection.

Dynamical methods have played a central role in understanding the distribution of closed geodesics. We show that these methods can also be used to study the distribution of simple closed geodesics. In particular, we prove that most closed geodesics in a closed hyperbolic manifold of dimension > 2 are simple. Moreover, we manage to control the injectivity radius of simple closed geodesics statistically. This is joint work with Vlad Markovic.