

abstract

GEOMETRY/DYNAMICAL SYSTEMS

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

The Dehn function is a group invariant which connects geometric and combinatorial group theory; it measures both the difficulty of the word problem and the area necessary to fill a closed curve in an associated space with a disc. The behavior of the Dehn function for high-rank lattices in high-rank symmetric spaces has long been an open question; one particularly interesting case is $SL(n; \mathbb{Z})$. Thurston conjectured that $SL(n; \mathbb{Z})$ has a quadratic Dehn function when $n \geq 4$. This differs from the behavior for $n = 2$ (when the Dehn function is linear) and for $n = 3$ (when it is exponential). I have proved Thurston's conjecture when $n \geq 5$, and in this talk, I will give an introduction to the Dehn function, discuss some of the background of the problem and give a sketch of the proof.