Topology Seminar

Number Theory and a Lower Bound for Closed Geodesics

Sean Thomas
Emory University

Abstract: Lehmer's conjecture (1933) states that the Mahler measure of an algebraic number that is not a root of unity is bounded away from 1. The aim of the seminar is to show the conjecture would imply there is a positive lower bound for closed geodesics in compact arithmetic hyperbolic 3-manifolds of finite volume. In the first lecture, I will introduce the necessary background material on arithmetic hyperbolic 3-manifolds. Then, in the second lecture, I will show how Lehmer's conjecture would imply the existence of the aforementioned positive lower bound. Also, I will prove the existence of a positive lower bound for closed geodesics in non-compact arithmetic hyperbolic 3-manifolds of finite volume to fully address the topic.

Tuesday, February 3, 2009, 3:00 pm
Mathematics and Science Center: E406

Mathematics and Computer Science
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