

1135-57-2702

Rosemary K Guzman* (rguzma1@illinois.edu) and **Peter B Shalen** (shalen@math.uic.edu). *Quantitative Mostow Rigidity: Relating volume to topology for hyperbolic 3-manifolds.*

A celebrated result of Mostow states that if M, N are two closed, connected, orientable, hyperbolic n -manifolds which are homotopy equivalent in dimensions $n \geq 3$, then M, N are equivalent up to isometry.

This unique geometric-topological relationship has been the framework for many important results in the field, including notable results providing lower bounds on the volume of M , and results relating volume to homology (Culler-Shalen).

In this talk, we will focus on the case where the fundamental group of M has a property, "k-free," for $k \geq 5$, and discuss current work toward an improvement on the volume bound from the current known bound of 3.44 which holds for $k \geq 4$. (Received September 26, 2017)