

Mathematics Colloquium

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**Are Low-Volume
Hyperbolic 3-Manifolds
Uncomplicated?**

Abstract: In the late 1970's W. Thurston, utilizing work of T. Jorgensen and M. Gromov, proved that the set of volumes of hyperbolic 3-manifolds is well-ordered and of order type ω^ω . In particular, he proved that there is a least volume of all hyperbolic 3-manifolds, and then a next lowest volume, and a next lowest, and so on, limiting on the lowest limiting volume which is the volume of a cusped hyperbolic 3-manifold; and then there is a next lowest volume, and so on. Subsequently, Thurston, Weeks, and Matveev-Fomenko conjectured that low-volume hyperbolic 3-manifolds are topologically uncomplicated.

In this talk, we plan to present a new idea (the "Mom Technology") that shows promise for answering low-volume questions, including the Complexity Conjecture of Thurston, Weeks, Matveev-Fomenko. This is joint work with D. Gabai and P. Milley.

Monday, October 17

4:00-5:00 pm

204 Smith Hall

Please note special day