CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, March 8
2:00 – 3:00 PM
Maria Sanford, Room 101

COUNTING MINIMAL SURFACES IN QUASI FUCHSIAN 3-MANIFOLDS

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ABSTRACT

A quasi-Fuchsian group Γ is a Kleinian group whose limit set is a Jordan curve (but not a round circle), the quotient space $M \coloneqq \mathrm{H}/\Gamma$ is called a quasi-Fuchsian 3-manifold. Topologically, M is homeomorphic to the product of a real line and a surface with negative Euler characteristic. In this talk, we always assume surfaces are closed with genus at least two.

Any quasi-Fuchsian 3-manifold M contains a convex core, which is the smallest convex submanifold of M such that the inclusion map is a homotopy equivalence. By a theorem of Schoen and Yau, this implies that any quasi-Fuchsian 3-manifold contains at least one least area incompressible minimal surface. On the other hand, Michael Anderson proved that any quasi-Fuchsian 3-manifold contains finitely many stable (i.e. locally least area) incompressible minimal surfaces.

In this talk, we fix a closed surface S whose genus is at least two, and let $QF(S)$ be a space of quasi-Fuchsian 3-manifolds which are homotopic to S. We will discuss the following question: In what condition, for any positive integer N, there is a quasi-Fuchsian 3-manifold in $QF(S)$ containing at least N stable incompressible minimal surfaces?

For further information:

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