

Geometry, Groups and Dynamics/GEAR Seminar
(held at the Illinois hub of GEAR)

12:00 pm, Thursday, March 28, 2019, 243 Altgeld Hall

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Classifying incompressible surfaces in hyperbolic mapping tori

Abstract: One often gains insight into the topology of a manifold by studying its sub-manifolds. Some of the most interesting sub-manifolds of a 3-manifold are the "incompressible surfaces", which, intuitively, are the properly embedded surfaces that cannot be further simplified while remaining non-trivial. In this talk, I will present some results on classifying orientable incompressible surfaces in a hyperbolic mapping torus whose fibers are 4-punctured spheres. I will explain how such a surface gives rise to a path which satisfies certain combinatorial properties in the arc complex of the 4-punctured sphere. This extends and generalizes results of Floyd, Hatcher, and Thurston.