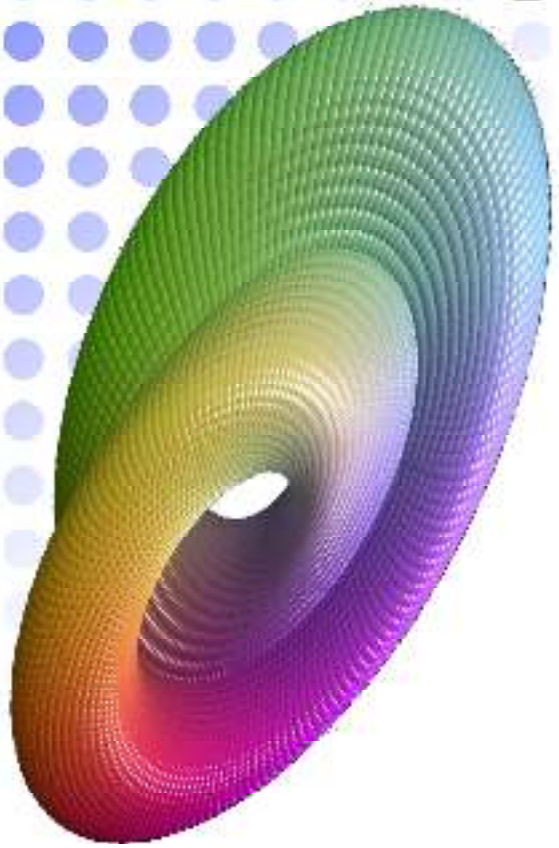
Michigan Math Club

Thursday at 4pm in the Commons

Free Pizza and Pop



Golf in Hyperbolic Space

Dick Canary

Abstract for 18 February 2016

There are three “nice” 2-dimensional geometries: spherical, Euclidean and hyperbolic. We will introduce hyperbolic geometry, and get a feel for it by discussing how various sports would be affected by hyperbolic geometry: baseball, golf and beachball. It turns out that every surface can be given a geometric structure modeled on either spherical, Euclidean or hyperbolic geometry. We will discuss how these geometric structures are found for a given surface. We will then give a brief discussion of Thurson’s Geometrization Conjecture, which is a generalization of this result to 3-dimensional spaces. This is now proved as the Geometrization Theorem, due to work of Perelman which won him a Fields Medal in 2006.

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