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Frank Morgan* (fmorgan@williams.edu). *Least-perimeter Tiles of the Hyperbolic Plane.*

In 2000 Thomas Hales proved that a regular hexagon is the least-perimeter tile of the Euclidean plane for given area. In the hyperbolic plane, what is the least-perimeter tile of given area? Since there is no scaling in the hyperbolic plane, for each area this is a different problem. There are regular n -gonal tiles for all n , but none have been proved to minimize perimeter. The optimal triangular tile cannot always be equilateral; is it isosceles? Perhaps for some areas the solution is not unique?

There has been some progress by my 2016 Williams College NSF SMALL undergraduate research Geometry Group—Leo Di Giosia, Jay Habib, Lea Kenigsberg, Dylanger Pittman, and especially Weitao Zhu <wz1@williams.edu>, who is talking about it at this meeting. (Received September 12, 2016)