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Tessellations from long geodesics on surfaces

I will talk about a recent result of Athreya, Lalley, Wroten and myself. Given a hyperbolic surface S, a typical long geodesic arc will divide the surface into many polygons. We give statistics for the geometry of this tessellation as the length of the arc goes to infinity. Along the way, we look at how long geodesic arcs behave in very small balls on the surface.