1118-55-98 **Matthew M Wroten*** (mmw23@psu.edu), **Jayadev Athreya**, **Steven Lalley** and **Jenya Sapir**.
Statistical regularities of long geodesics on hyperbolic surfaces: local geometric properties. Preliminary report.

Any finite geodesic segment γ on a closed hyperbolic surface S partitions S into a finite number of non-overlapping geodesic polygons of various shapes and sizes, whose vertices are the self-intersection points of γ. If a geodesic segment γ of length T is chosen by selecting its initial tangent vector X at random, according to (normalized) Liouville measure on T^1S, then with probability 1, as $T \to \infty$ the maximal diameter of a polygon in the induced partition will converge to 0, and hence the number of polygons in the partition will become large. The goal of this talk is to elucidate some of the statistical properties of this random polygonal partition for large T. Our main result will be a *local* geometric description of the partition: roughly, this will assert that in a neighborhood of any point $x \in S$ the partition will, in the large$-T$ limit, look as if it were induced by a Poisson line process. (Received January 26, 2016)