

**EXTREMAL LENGTH, GEOMETRIC LENGTH, AND
ERGODICITY OF THE GEODESIC FLOW ON A RIEMANN
SURFACE**

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ABSTRACT. A Riemann surface having a dual existence as both a complex analytic surface as well as a (hyperbolic) geometric surface, opens a wealth of possible avenues for investigation. Our focus in this talk will be on finding geometric conditions (in terms of length-twist parameters) for when a Riemann surface is of so-called *parabolic type*. That is, it does not support a Green's function or equivalently the geodesic flow on the unit tangent bundle is ergodic. Much of the talk will concentrate on flute surfaces, arguably the simplest infinite type surface. This is joint work with Hrant Hakobyan and Dragomir Saric.