

PAIRS OF CLOSED GEODESICS IN METRIC GRAPHS

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Abstract: The "Prime Geodesic Theorem", proved by Huber for compact surfaces of constant negative curvature and Margulis for variable negative curvature, gives asymptotics for counting closed geodesics with respect to a bound on their length. Another natural problem to study is the distribution of pairs closed geodesics when their lengths are compared. Pollicott and Sharp studied pairs of closed geodesics on compact surfaces of negative curvature, the difference of whose length lie in a prescribed family of shrinking intervals, where the geodesics ordered with respect to a discrete length. In this talk, I will discuss a similar result in the setting of finite connected metric graphs. In this case, under certain conditions, we obtain an asymptotic estimate similar to that for surfaces of negative curvature. I will give a brief sketch on how an asymptotic for this problem can be obtained. The proof involves estimates on iterates of transfer operators, due to Dolgopyat.