1021-51-243   **Anna B Lenzhen*** (`alenzhen@umich.edu`), Department of Mathematics, 530 Church Street, Ann Arbor, MI 48109. *Teichmüller Geodesics that do not have a limit in $\mathcal{PMF}$.*

Any Teichmüller ray from a point $X \in \mathcal{T}_g$ is defined in terms of the flat metric of the corresponding quadratic differential. However, to find the limit, we need to be able to have some control over the hyperbolic metric. In general, there is no easy way to get a good estimate of the hyperbolic length of a curve. Therefore, it is quite non-trivial to study the asymptotics of Teichmüller geodesics with respect to the Thurston compactification.

Masur proved that in almost every direction through every point geodesic rays converge in $\hat{\mathcal{T}}_g$. In particular, if the vertical foliation F of a quadratic differential q is uniquely ergodic, then the geodesic ray corresponding to q converges to the class of F in $\mathcal{PMF}$. In the same paper he showed that, if all the leaves of F are closed, then the ray also converges. Hence it is natural to ask whether all the Teichmüller geodesics converge. It turns out that the answer is negative. I will describe the construction of a geodesic ray in $\mathcal{T}_2$ which does not have a limit in $\mathcal{PMF}$. (Received September 06, 2006)

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