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Ian Alexander Frankel* (ian@math.uchicago.edu). *A Comparison of Period Coordinates and Teichmüller Distance.*

The moduli space of Riemann surfaces $\mathcal{M}_{g,n}$ naturally carries a metric, known as the Teichmüller metric d_T , which measures the extent to which a positively oriented homeomorphism between two Riemann surfaces must fail to be conformal.

Points in cotangent bundle of $\mathcal{M}_{g,n}$ that do not belong to the zero section give rise to half-translation surfaces, which are closed oriented surfaces built by gluing polygons in the plane by identifying parallel or anti-parallel sides. We refer to this space as $QD(\mathcal{M}_{g,n})$, because they are associated with quadratic differentials.

$\mathcal{M}_{g,n}$ can be given a “Euclidean” metric d_E described by the Euclidean geometry of a good choice of polygons. Our theorem is that the natural map of metric spaces

$$(QD(\mathcal{M}_{g,n}), d_E) \rightarrow (\mathcal{M}_{g,n}, d_T)$$

is a locally Hölder map. (Received February 08, 2018)