APPROXIMATION OF A MAP BETWEEN ONE-DIMENSIONAL TEICHMÜLLER SPACES

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Abstract. The Teichmüller space of once-punctured tori can be realized as the upper half-plane $\mathbb{H}$, or via the Maskit embedding as a proper subset of $\mathbb{H}$. We construct and approximate the explicit biholomorphic map from Maskit's embedding to $\mathbb{H}$. This map involves the integration of an abelian differential constructed using an infinite sum over the elements of a Kleinian group. We approximate this sum and thereby find the locations of the square torus and the hexagonal torus in Maskit's embedding, and we show that the biholomorphism does not send vertical pleating rays in Maskit's embedding to vertical lines in $\mathbb{H}$.