

Coarse differentiation and the rank of Teichmuller space

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Abstract

Let S be surface of hyperbolic type and $T(S)$ be the Teichmuller space of S . We would like to study the group of quasi-isometries of $T(S)$. As a first step we determine the rank of $T(S)$, that is, the largest dimension N where a large box B in \mathbb{R}^N can be embedded quasi-isometrically into $T(S)$. The main tool we use is the coarse differentiation lemma. This states that, any quasi-isometric embedding, in the correct scale, is nearly an affine map.

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