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Uniformization of real algebraic curves and complex analytic coordinates on Teichmüller spaces

Let X be a complete nonsingular real algebraic curve of genus $g \geq 2$. Let Σ be the Galois group of $\mathbb{C}/\mathbb{R}$ and let $\mathbb{D}$ be the double half-plane $\mathbb{C}\backslash\mathbb{R}$. There is a Kleinian subgroup G of $\mathbf{PGL}_2(\mathbb{R})$ acting freely on $\mathbb{D}$ such that $X(\mathbb{C})$ and $\mathbb{D}/G$ are Σ-equivariantly biholomorphic. This is uniformization of the real algebraic curve X. Its interest lies in the fact that the group G is the equivariant fundamental group of $X(\mathbb{C})$. If the real algebraic curve X does not have any real points, the group G has a particularly simple presentation. This leads to a nice and new construction of a global system of complex analytic coordinates on the Teichmüller space of complex algebraic curves of genus g.