CONFORMAL VERSUS TOPOLOGICAL CONJUGACY OF AUTOMORPHISMS ON COMPACT RIEMANN SURFACES

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ABSTRACT. We produce a family of algebraic curves (closed Riemann surfaces) S_λ admitting two cyclic groups H_1 and H_2 of conformal automorphisms, which are topologically (but not conformally) conjugate and such that S/H_i is the Riemann sphere $\hat{\mathbb{C}}$. The relevance of this example is that it shows that the subvarieties of moduli space consisting of points parametrizing curves which occur as cyclic coverings (of a fixed topological type) of $\hat{\mathbb{C}}$ need not to be normal.

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