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Equivariant, almost homeomorphic maps between S^1 and S^2. (English) Zbl 0855.57012

Proc. Am. Math. Soc. 123, No. 9, 2915-2920 (1995).

Summary: Let Π be a Fuchsian group isomorphic to a nontrivial, closed surface group, and let $M = \mathbb{H}^3/\Gamma$ be a hyperbolic 3-manifold admitting an isomorphism $\rho : \Pi \to \Gamma$. Under certain assumptions, *J. Cannon*, and *W. Thurston* [Group invariant Peano curves (preprint)] and *Y. N. Minsky* [J. Am. Math. Soc. 7, 539-588 (1994; Zbl 0808.30027)] showed that there exists a ρ-equivariant, surjective, continuous map $f : S^1_\infty \to S^2_\infty$. In this paper, we prove that there exist zero-measure sets Λ^1 in S^1_∞ and Λ^2 in S^2_∞ such that the restriction $f|_{S^1_\infty - \Lambda^1} : S^1_\infty - \Lambda^1 \to S^2_\infty - \Lambda^2$ is a homeomorphism.

MSC:

57M50 General geometric structures on low-dimensional manifolds
57M60 Group actions on manifolds and cell complexes in low dimensions

Keywords:

measured foliations; Fuchsian group; surface group; hyperbolic 3-manifold; homeomorphism

Full Text: DOI