

Bishop, Christopher J.

Quasiconformal mappings of Y -pieces. (English) Zbl 1064.30045
Rev. Mat. Iberoam. 18, No. 3, 627-652 (2002).

In order to deform a Riemann surface by shortening a closed geodesic, the author gives a quasiconformal mapping between Y -pieces. A Riemann surface with boundary is called a generalized Y -piece if it is homeomorphic to a 2-sphere minus three disks (or points) and the boundary consists of three closed geodesics (or punctures). When Y -pieces Y_1, Y_2 have three boundary lengths $(a_1, b_1, c_1), (a_2, b_1, c_1)$, respectively, a quasiconformal mapping $f : Y_1 \rightarrow Y_2$ is considered such that it is isometric on two boundary components γ_b, γ_c and multiplies length by a_2/a_1 on γ_a . Furthermore the Beltrami coefficient of f decays exponentially according to the distance from γ_a .

The quasiconformal mappings in this paper are used in another paper by the author [Rev. Mat. Iberoam. 18, No. 3, 653–684 (2002; [Zbl 1064.30041](#))] to construct quasi-Fuchsian groups whose limit sets are non-rectifiable curves of dimension 1.

Reviewer: [Gou Nakamura \(Toyota\)](#)

MSC:

[30F60](#) Teichmüller theory for Riemann surfaces
[30C20](#) Conformal mappings of special domains

Cited in **13** Documents

Keywords:

[Y-pieces](#); [Hausdorff dimension](#); [quasi-Fuchsian groups](#); [quasiconformal deformation](#), [critical exponent](#); [convex core](#)

Full Text: [DOI](#) [EuDML](#)

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