Möglichst konforme Spiegelung an einem Jordanbogen auf der Zahlenebene. (German)

For a Jordan curve or arc C on the complex sphere by a reflection in C is meant a sense reversing homeomorphism of the sphere which leaves the points of C invariant. If such a homeomorphism is a quasiconformal mapping it is called a quasiconformal reflection. If one such exists one can ask for the properties of a maximally conformal reflection, i.e., one with minimal maximal dilation $q_C$. The author has studied this question in a number of interesting works [see especially, Jahresber. Dtsch. Math.-Ver. 90, 90-109 (1988; Zbl 0638.30021); Complex Analysis, Artic. dedicated to Albert Pfluger, 139-156 (1988; Zbl 0659.30016)]. In the present paper the author considers quasiconformal reflections in a Jordan arc C under the additional assumption that the point at infinity is fixed by the mapping. The results have the form of asymptotic behavior of $q_C$ for subarcs $C$ on a fixed analytic arc as $C$ shrinks down to a point and properties of quadratic differentials associated with a maximally conformal mapping.

Reviewer: J.A. Jenkins

MSC:

30C62 Quasiconformal mappings in the complex plane
30C75 Extremal problems for conformal and quasiconformal mappings, other methods

Cited in 1 Document

Full Text: DOI