Imayoshi, Yoichi; **Ito, Manabu**; **Yamamoto, Hiroshi**
A remark on the Bers type of some self-maps of Riemann surfaces with two specified points.
(English) ｜Zbl 1037.32014｜

Introduction: Let S be a Riemann surface of analytically finite type (g, n) with $2g - 2 + n > 0$. Take two points $p_1, p_2 \in S$, and set $S_{p_1, p_2} = S \setminus \{p_1, p_2\}$. Let $\mathrm{Homeo}^+(S; p_1, p_2)$ be the group of all orientation preserving homeomorphisms $\omega : S \to S$ fixing p_1, p_2 and isotopic to the identity on S. Denote by $\mathrm{Homeo}_0^+(S; p_1, p_2)$ the set of all elements of $\mathrm{Homeo}^+(S; p_1, p_2)$ isotopic to the identity on S_{p_1, p_2}. Then $\mathrm{Homeo}_0^+(S; p_1, p_2)$ is a normal subgroup of $\mathrm{Homeo}^+(S; p_1, p_2)$. We set $\mathrm{Isot}(S; p_1, p_2) = \mathrm{Homeo}^+(S; p_1, p_2)/\mathrm{Homeo}_0^+(S; p_1, p_2)$.

The purpose of this note is to announce a result on the Nielsen-Thurston-Bers type classification of an element $[\omega]$ of $\mathrm{Isot}^+(S; p_1, p_2)$. We give a necessary and sufficient condition for the type to be hyperbolic. The condition is described in terms of properties of the pure braid $[b_\omega]$ induced by $[\omega]$. Proofs will appear elsewhere. The problem considered in this note and the form of the solution are suggested by *I. Kra*'s beautiful theorem in [Acta Math. 146, 231–270 (1981; Zbl 0477.32024)], where he treats self-maps of Riemann surfaces with one specified point.

For the entire collection see [Zbl 1022.00010].

MSC:

32G15	Moduli of Riemann surfaces, Teichmüller theory (complex-analytic aspects in several variables)
14H15	Families, moduli of curves (analytic)
30F10	Compact Riemann surfaces and uniformization
30F40	Kleinian groups (aspects of compact Riemann surfaces and uniformization)
30F60	Teichmüller theory for Riemann surfaces
57M99	General low-dimensional topology

Keywords:

Nielsen-Thurston-Bers type classification