

[Seppälä, Mika; Sorvali, Tuomas](#)

**Parametrization of Möbius groups acting in a disk.** (English) Zbl 0606.30042  
[Comment. Math. Helv.](#) 61, 149-160 (1986).

We parametrize groups of Möbius-transformations by multipliers of the elements of the group. Let  $G$  be a group generated by  $2g$ ,  $g > 1$ , hyperbolic Möbius-transformations mapping the upper half-plane  $U$  onto itself. Supposing that the set of generators of  $G$  satisfies one relation and certain technical conditions we construct a set of  $6g-4$  elements of  $G$  such that the multipliers of these Möbius-transformations parametrize  $G$  up to conjugation by a Möbius-transformation. The group  $G$  need not be discontinuous.

In the case of a Fuchsian group  $G$  we can apply these considerations to get a parametrization for the Teichmüller space of compact genus  $g$  Riemann surfaces by  $6g-4$  geodesic length functions.

**MSC:**

- [30F35](#) Fuchsian groups and automorphic functions (aspects of compact Riemann surfaces and uniformization)
- [32G15](#) Moduli of Riemann surfaces, Teichmüller theory (complex-analytic aspects in several variables)
- [14H15](#) Families, moduli of curves (analytic)

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