Abikoff, W.; **Appel, K.**; **Schupp, P.**

Lifting surface groups to SL(2,$\mathbb{C}$). (English) Zbl 0531.30037

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The fundamental group of a compact orientable surface of genus $g \geq 2$ is a subgroup of $PSL(2,\mathbb{R}) = SL(2,\mathbb{R})/\{\pm I\}$ with 2g generators and one relation: $\prod_{iodd}[\gamma_i, \gamma_{i+1}] = id$. If $\hat{\phi}_i$ is either of the two lifts of γ_i to SL(2,$\mathbb{R}$), then $\prod_{iodd}[\hat{\gamma}_i, \hat{\gamma}_{i+1}] = \pm I$. The authors prove that for any choice of the generators $\gamma_1, ..., \gamma_{2g}$ and any lifts $\hat{\gamma}_1, ..., \hat{\gamma}_{2g}$ to SL(2,$\mathbb{R}$), $\prod_{iodd}[\hat{\gamma}_i, \hat{\gamma}_{i+1}] = I$.

Reviewer: M.Engber

MSC:

30F10	Compact Riemann surfaces and uniformization
30F35	Fuchsian groups and automorphic functions (aspects of compact Riemann surfaces and uniformization)
57N05	Topology of the Euclidean 2-space, 2-manifolds (MSC2010)
55Q05	Homotopy groups, general; sets of homotopy classes

Keywords:

fundamental group of compact surface; SL(2,$\mathbb{R}$)