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AUTOMORPHISM GROUPS OF SIMPLICIAL COMPLEXES OF INFINITE-TYPE SURFACES

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Abstract: Let S be an orientable surface of infinite genus with a finite number of boundary components. In this work we consider the curve complex $\mathcal{C}(S)$, the nonseparating curve complex $\mathcal{N}(S)$, and the Schmutz graph $\mathcal{G}(S)$ of S. When all topological ends of S carry genus, we show that all elements in the automorphism groups $\mathrm{Aut}(\mathcal{C}(S))$, $\mathrm{Aut}(\mathcal{N}(S))$, and $\mathrm{Aut}(\mathcal{G}(S))$ are *geometric*, *i.e.* these groups are naturally isomorphic to the *extended* mapping class group $\mathrm{MCG}^*(S)$ of the infinite surface S. Finally, we study rigidity phenomena within $\mathrm{Aut}(\mathcal{C}(S))$ and $\mathrm{Aut}(\mathcal{N}(S))$.

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