SELF-SIMILAR CLOSURE OF FREE PRODUCTS OF FINITE GROUPS

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Let X be a finite set, $|X| \geq 2$, X^* — the set of all infinite words over X. A faithful action of a group G on X^* is called self-similar ([**?**]) if for arbitrary $x \in X$, $g \in G$ there exist $y \in X$ and $h \in G$ such that

$$(xw)^g = y(w)^h, w \in X^*.$$

Such an action is defined by some automaton over X and defines an automorphism of the rooted tree X^*. We say that this action is finite state if for each element $g \in G$ the corresponding automorphism is finite state.

We intend to present a general construction of automata defining a finite state self-similar action of the group that is generated two copies of the free product of given finite groups.

References

[1] V.Nekrashevych *Self-similar groups.* Amer. Math. Soc., Providence, 2005.