Zentralblatt–MATH

Niblo, G.A.
Separability properties of free groups and surface groups. (English)
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Let G be a group. The profinite topology on G is the topology obtained by taking the finite-index normal subgroups of G to be a base for the neighbourhoods of the identity. The group G is said to be subgroup separable if all its finitely generated subgroups are closed in the profinite topology. This concept has been studied by several authors. Now suppose that H is a subgroup of G. Then G is said to be coset separable with respect to H if for any finitely generated subgroup K of G, and for any $g \in G$ the double coset HgK is closed in the profinite topology. This concept was introduced by *R. Gitik* and *E. Rips* ["On separability properties I", preprint (1990)] in a different form; the above formulation is due to the author. He gives a criterion for G to be coset separable with respect to H (Theorem 3.2). He then deduces that groups G in any of the classes below have the property that all double cosets AgB (A, B finitely generated subgroups of G, $g \in G$) are closed in the profinite topology: free groups; surface groups; finitely generated Fuchsian groups; fundamental groups of Seifert fibred 3-manifolds. The result for free groups was originally proved by Gitik and Rips.

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