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Free product, profinite topology and finitely generated subgroups. (English)

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Summary: We consider the following property for a group G : (RZ_n) if H_1, \dots, H_n are finitely generated subgroups of G then the set $H_1 H_2 \cdots H_n = \{h_1 \cdots h_n \mid h_1 \in H_1, \dots, h_n \in H_n\}$ is closed with respect to the profinite topology of G . It is obvious that finite groups and finitely generated commutative groups have the property (RZ_n) . L. Ribes and P. Zalesskij proved that any free group has (RZ_n) . We show that the property (RZ_n) is stable under the free product operation. We use techniques developed by B. Herwig and D. Lascar on the one hand, R. Gitik on the other hand.

AMS subject classification: 20E06;20E26

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