Zentralblatt–MATH

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Subgroup separability of certain HNN extensions of finitely generated Abelian groups. (English)

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A group G is called subgroup separable if, for each finitely generated subgroup M and for each $x \notin M$, there exists a normal subgroup N of finite index in G such that $x \notin MN$. In this paper, the author gives a characterization of certain HNN-extensions to be subgroup separable.

More precisely, he proves the following theorem: Let $G = \langle t, K;\ t^{-1}At = B,\ \phi\rangle$ be an HNN-extension, where K is a finitely generated Abelian group and A and B have finite index in K. Then the following are equivalent: (i) G is subgroup separable; (ii) Either $K = A = B$ or there exists a subgroup H of finite index in K and H is normal in G; (iii) There exists a finitely generated Abelian group X such that K is a subgroup of finite index in X and an automorphism $\overline{\phi} \in \mathrm{Aut}X$ with $\overline{\phi}|_A = \phi$. For the proof, the author uses also three lemmas from a paper of the reviewer and *E. Raptis* and *D. Varsos* [Arch. Math. 53, No. 2, 121-125 (1989; Zbl 651.20060)]. Note that Lemma 7 is Theorem 2 of the above mentioned paper, phrased slightly differently and with essentially the same proof. (Also submitted to MR).

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