Zentralblatt–MATH

Wong, P.C.

The potency of certain free-by-cyclic groups. (English)

Bull. Malays. Math. Soc., II. Ser. 9, 51-53 (1986).

Let G be an infinite cyclic extension of a free group $F \triangleleft G$, and let T denote an infinite cyclic complement of F in G. Then the conjugating action of T on F induces on F/F' the structure of a $\mathbf{Z}T$-module. It is shown that if this module is free, then G is "potent", i.e. corresponding to each $g \in G$, $g \neq 1$, and each positive integer n, there is a homomorphism ϕ from G to a finite group such that $g\phi$ has order precisely n in the finite image $G\phi$. (It is not difficult to show that free groups are potent.)

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