LOWER CENTRAL WORDS IN FINITE p-GROUPS

Iker de las Heras and Marta Morigi

Abstract: It is well known that the set of values of a lower central word in a group G need not be a subgroup. For a fixed lower central word γ_r and for $p \geq 5$, Guralnick showed that if G is a finite p-group such that the verbal subgroup $\gamma_r(G)$ is abelian and 2-generator, then $\gamma_r(G)$ consists only of γ_r-values. In this paper we extend this result, showing that the assumption that $\gamma_r(G)$ is abelian can be dropped. Moreover, we show that the result remains true even if $p = 3$. Finally, we prove that the analogous result for pro-p groups is true.