

Exponent of a finite group admitting a coprime automorphism of prime order

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Abstract

Let G be a finite group admitting an automorphism ϕ of prime order p such that $(|G|, p) = 1$. Denote by G_ϕ the fixed-point subgroup of ϕ in G , by $G_{-\phi}$ the set $\{x^{-1}x^\phi; x \in G\}$ and by $[G, \phi]$ the subgroup generated by $G_{-\phi}$. In this talk, some results bounding the exponent of $[G, \phi]$ will be present. Among them, a sketch of the following theorem will be given:

Theorem: Let e and r be positive integers. If G_ϕ has rank r and $x^e = 1$ for each $x \in G_{-\phi}$, then the exponent of $[G, \phi]$ is (e, p, r) -bounded.

This is a joint work with Pavel Shumyatsky. It is important to point out that the results mentioned in this talk are published in [1] and [2].

References

- [1] S.R. S.Rodrigues, P. Shumyatsky, Exponent of a finite group of odd order with an involutory automorphism, *Archiv der Mathematik*, **113** (2019), 113-118.
- [2] S.R. S.Rodrigues, P. Shumyatsky, Exponent of a finite group admitting a coprime automorphism of prime order, *J. Group Theory*, (2020), DOI 10.1515/jgth-2020-0141.

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