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Title: The influence of complemented minimal subgroups on the structure of finite groups

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A subgroup H of a finite group G is said to be complemented in G if there exists a subgroup K of G such that $G = HK$ and $H \cap K = 1$. In this paper the following theorem is proved: Let G be a finite group and let p be the smallest prime dividing the order of G. Then G is p-nilpotent if and only if every minimal subgroup of $P \cap G^{\mathcal{N}}$ is complemented in $N_G(P)$, where P is a Sylow p-subgroup of G and $G^{\mathcal{N}}$ is the nilpotent residual of G. As some applications, some interesting results related with complemented minimal subgroups are obtained.

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