Title: On finite $p$-groups with cyclic characteristic series

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Let $G$ be a finite $p$-group having a characteristic cyclic series (c.c.s.) and let $\Phi$ be its Frattini subgroup. It is shown that the automorphism group of $G$ is either a $p$-group or is the semidirect product of a normal $p$-Sylow subgroup of $G$ by an elementary abelian group of exponent $p - 1$ and of order $(p - 1)^r$, where $1 \leq r \leq s$ and $s = |G/\Phi|$. It is also shown that $G$ has a c.c.s. containing $\Phi$.

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