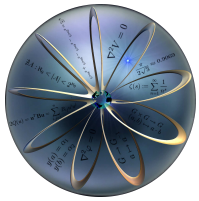

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subgroups containing the normalizers of Sylow subgroups normalize themselves

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Let G be a finite group, and S a Sylow subgroup. Let M be a subgroup such that $N_G(S) \subset M$. Then $M = N_G(M)$.

Proof. By order considerations, S is a Sylow subgroup of M. Since M is normal in $N_G(M)$, by the Frattini argument, $N_G(M) = N_G(S)M = M$. $\square$