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On Soluble Radicals of Finite Groups

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Assume that G is a finite group, $\pi(G) = \{s\} \cup \sigma$, $s > 2$, Σ is a set of Sylow σ -subgroups in which one subgroup is taken for each $p_i \in \sigma$, and $R(G)$ is the largest normal soluble subgroup in G (soluble radical of G). Moreover, suppose that each Sylow p_i -subgroup $G_{p_i} \in \Sigma$ normalizes the s -subgroup $T^b \neq 1$ of the group G . In this case, we establish the conditions under which s divides $|R(G)|$.

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