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Criteria of nilpotency and influence of contranormal subgroups on the structure of infinite groups

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Abstract: Following J.S. Rose, a subgroup H of a group G is called contranormal if $G=H^G$. In a certain sense, contranormal subgroups are antipodes to subnormal subgroups. It is well known that a finite group is nilpotent if and only if it has no proper contranormal subgroups. However, for infinite groups this criterion is not valid. There are examples of non-nilpotent infinite groups whose subgroups are subnormal; in particular, these groups have no contranormal subgroups. Nevertheless, for some classes of infinite groups, the absence of contranormal subgroups implies nilpotency of the group. The present article is devoted to the search of such classes. Some new criteria of nilpotency in certain classes of infinite groups have been established.

Key Words: Contranormal subgroups, descending subgroups, nilpotent subgroups, minimax groups.

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