

On locally nilpotent groups having proper contranormal subgroups

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Abstract. A subgroup H of a group G is **contranormal in G** if $H^G = G$, where $H^G = \langle x^{-1}hx \mid h \in H, x \in G \rangle$ is the normal closure of H in G . For example G is contranormal in G . Moreover, every subgroup of a finite group G is a contranormal subgroup of a subnormal subgroup of G . The concept of contranormal subgroup has been introduced by J.S. Rose in the paper [3]. Contranormal subgroups have been studied for example in the paper [2]. Obviously a contranormal subgroup H of a group G is normal or subnormal in G if and only if $H = G$. It follows that groups whose subgroups are all subnormal, in particular nilpotent groups, do not contain proper contranormal subgroups. The converse is also true for finite groups.

The aim of this talk is to present some results obtained in the locally nilpotent case in the paper [1]. We first notice that locally nilpotent groups can have proper contranormal subgroups. We describe locally nilpotent groups having a proper finite contranormal subgroup. We also investigated the structure of a locally nilpotent group having either a finitely generated or a Cernikov proper contranormal subgroup.

References

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- [3] J.S Rose, Nilpotent Subgroups of Finite Soluble Groups, *Math. Z.*, **106** (1968), 97-112.