

Guo, Wenbin; Lu, Yi; Niu, Wenjuan

***S*-embedded subgroups of finite groups.** (English. Russian original) Zbl 1255.20021
Algebra Logic 49, No. 4, 293-304 (2010); translation from Algebra Logika 49, No. 4, 433-450 (2010).

Summary: A subgroup H of G is said to be S -embedded in G if G has a normal subgroup N such that HN is s -permutable in G and $H \cap N \leq H_{sG}$, where H_{sG} is the largest s -permutable subgroup of G contained in H . S -embedded subgroups are used to give novel characterizations for some classes of groups. New results are obtained and a number of previously known ones are generalized.

MSC:

- 20D40 Products of subgroups of abstract finite groups
- 20D20 Sylow subgroups, Sylow properties, π -groups, π -structure
- 20D10 Finite solvable groups, theory of formations, Schunck classes, Fitting classes, π -length, ranks
- 20D25 Special subgroups (Frattni, Fitting, etc.)

Cited in 5 Documents

Keywords:

finite groups; permutable subgroups; S -embedded subgroups; supersoluble groups; p -nilpotent groups; Sylow subgroups; quasinormal subgroups

Full Text: [DOI](#)

References:

- [1] L. A. Shemetkov, Formations of Finite Groups [in Russian], Nauka, Moscow (1978). · [Zbl 0496.20014](#)
- [2] W. Guo, The Theory of Classes of Groups, Kluwer, Dordrecht (2000). · [Zbl 1005.20016](#)
- [3] O. Kegel, "Sylow-Gruppen und Subnormalteiler endlicher Gruppen," Math. Z., 78, 205–221 (1962). · [Zbl 0102.26802](#) · [doi:10.1007/BF01195169](#)
- [4] W. E. Deskins, "On quasinormal subgroups of finite groups," Math. Z., 82, No. 2, 125–132 (1963). · [Zbl 0114.02004](#) · [doi:10.1007/BF01111801](#)
- [5] Y. Wang, "C-normality of groups and its properties," J. Alg., 180, No. 3, 954–965 (1996). · [Zbl 0847.20010](#) · [doi:10.1006/jabr.1996.0103](#)
- [6] W. Guo, Y. Wang, and L. Shi, "Nearly s -normal subgroups of finite group," J. Alg. Disc. Struct., 6, No. 2, 95–106 (2008). · [Zbl 1170.20015](#)
- [7] K. Doerk and T. Hawkes, Finite Soluble Groups, Walter de Gruyter, New York (1992). · [Zbl 0753.20001](#)
- [8] W. Guo, K. P. Shum, and A. N. Skiba, "On solubility and supersolubility of some classes of finite groups," Sci. China Ser. A, 52, No. 2, 272–286 (2009). · [Zbl 1189.20023](#) · [doi:10.1007/s11425-009-0008-8](#)
- [9] A. Skiba, "On weakly s -permutable subgroups of finite groups," J. Alg., 315, No. 1, 192–209 (2007). · [Zbl 1130.20019](#) · [doi:10.1016/j.jalgebra.2007.04.025](#)
- [10] H. Wielandt, "Subnormal subgroups and permutation groups. Lecture given at the Ohio state university," Columbus, Ohio (1971).
- [11] W. Guo, A. Skiba, and K. P. Shum, "X-quasinormal subgroups," Sib. Mat. Zh., 48, No. 4, 742–759 (2007). · [Zbl 1153.20304](#) · [doi:10.1007/s11202-007-0061-x](#)
- [12] W. Guo, "On $\frac{F}{\langle F \rangle}$ -supplemented subgroups of finite groups," Manusc. Math., 127, No. 2, 139–150 (2008). · [Zbl 1172.20019](#) · [doi:10.1007/s00229-008-0194-7](#)
- [13] D. J. Robinson, A Course in the Theory of Groups, Springer, New York (1982). · [Zbl 0483.20001](#)
- [14] B. Huppert, Endliche Gruppen, Vol. 1, Grundlehren mathem. Wiss., 134, Springer, Berlin (1979).
- [15] S. Srinivasan, "Two sufficient conditions for supersolubility of finite groups," Isr. J. Math., 35, No. 3, 210–214 (1980). · [Zbl 0437.20012](#) · [doi:10.1007/BF02761191](#)
- [16] W. Guo, K. P. Shum, and A. N. Skiba, "G-covering subgroup systems for the class of supersoluble and nilpotent groups," Isr. J. Math., 138, 125–138 (2003). · [Zbl 1050.20009](#) · [doi:10.1007/BF02783422](#)
- [17] A. A. Alsheik, "Finite groups with given c -permutable subgroups," Alg. Discr. Math., No. 2, 9–16 (2004). · [Zbl 1067.20018](#)
- [18] D. Li and X. Guo, "The influence of c -normality of subgroups on the structure of finite groups," J. Pure Appl. Alg., 150, No. 1, 53–60 (2000). · [Zbl 0967.20011](#) · [doi:10.1016/S0022-4049\(99\)00042-0](#)

- [19] M. Asaad, M. Ramadan, and A. Shaalan, "Influence of $\{\pi\}$ -quasinormality on maximal subgroups of Sylow subgroups of Fitting subgroup of a finite group," Arch. Math., 56, No. 6, 521–527 (1991). · [Zbl 0738.20026](#) · [doi:10.1007/BF01246766](#)
- [20] M. Asaad, "On maximal subgroups of Sylow subgroups of finite groups," Comm. Alg., 26, No. 11, 3647–3652 (1998). · [Zbl 0915.20008](#) · [doi:10.1080/00927879808826364](#)
- [21] S. Li, J. Lu, and W. Meng, "Some sufficient conditions for supersolubility of finite groups," Guangxi Sci., 13, 241–244 (2006).
- [22] X. Guo and K. P. Shum, "On c -normal maximal and minimal subgroups of Sylow p -subgroups of finite groups," Arch. Math., 80, No. 6, 561–569 (2003). · [Zbl 1050.20010](#) · [doi:10.1007/s00013-003-0810-4](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.