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The lattice of closure operators on a subgroup lattice. (English) Zbl 06891554
Commun. Algebra 46, No. 4, 1387-1396 (2018)

Summary: We say a lattice L is a subgroup lattice if there exists a group G such that $\text{Sub}(G) \cong L$, where $\text{Sub}(G)$ is the lattice of subgroups of G , ordered by inclusion. We prove that the lattice of closure operators which act on the subgroup lattice of a finite group G is itself a subgroup lattice if and only if G is cyclic of prime power order.

MSC:

06A15 Galois correspondences, closure operators (in relation to ordered sets)
20D30 Series and lattices of subgroups

Cited in 1 Document

Keywords:

closure operators; lattice; subgroups

Full Text: [DOI](#)

References:

- [1] Birkhoff, G., On the combination of subalgebra, *\textit{Proc. Cambridge Philos. Soc.}*, 29, 441-461, (1933)
- [2] Birkhoff, G., On the combination of topologies, *\textit{Fundam. Math.}*, 29, 156-166, (1936) · [Zbl 62.0688.05](#)
- [3] Birkhoff, G., *\textit{Lattice Theory}*, (1979), American Mathematical Society, Providence, R.I. · [Zbl 0126.03801](#)
- [4] Dwinger, Ph., On the closure operators of a complete lattice, *\textit{Nederl. Akad. Wetensch. Proc. Ser. A.}* 57, *\textit{Indag. Math.}*, 16, 560-563, (1954) · [Zbl 0056.26204](#)
- [5] Giacobazzi, R.; Palamidessi, C.; Ranzato, F., Weak relative pseudo-complements of closure operators, *\textit{Algebra Univ.}*, 36, 3, 405-412, (1996) · [Zbl 0901.06003](#)
- [6] Gorbunov, V. A., *\textit{Algebraic Theory of Quasivarieties}*, (1998), Siberian School of Algebra and Logic, Consultants Bureau, New York
- [7] Kilpack, M.
- [8] Kilpack, M.; Magidin, A.
- [9] Kilpack, M.; Magidin, A.
- [10] Ore, O., Combinations of closure relations, *\textit{Ann. Math. Second Ser.}*, 44, 514-533, (1943) · [Zbl 0060.06203](#)
- [11] Rotman, J. J., *\textit{An Introduction to the Theory of Groups}*, (1995) · [Zbl 0810.20001](#)
- [12] Ward, M., The closure operators of a lattice, *\textit{Ann. Math.}*, 42, 191-196, (1942) · [Zbl 0063.08179](#)
- [13] Whitman, P., Lattices, equivalence relations and subgroups, *\textit{Bull. Am. Math. Soc.}*, 52, 507-522, (1946) · [Zbl 0060.06505](#)

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