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On congruence permutable G-sets

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Abstract: An algebraic structure is said to be congruence permutable if its arbitrary congruences α and β satisfy the equation $\alpha \circ \beta = \beta \circ \alpha$, where $\circ$ denotes the usual composition of binary relations. To an arbitrary G-set X satisfying $G \cap X = \emptyset$, we assign a semigroup $(G, X, 0)$ on the base set $G \cup X \cup \{0\}$ containing a zero element $0 \notin G \cup X$, and examine the connection between the congruence permutability of the G-set X and the semigroup $(G, X, 0)$.

Keywords: G-set; congruence permutable algebras; semigroup
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References

[1] Clifford A. H., Preston G. B., *The Algebraic Theory of Semigroups, Vol. I*, Mathematical Surveys, No. 7, American Mathematical Society, Providence, 1961.
[2] Deák A., Nagy A., *Finite permutable Putcha semigroups*, Acta Sci. Math. (Szeged) **76** (2010), no. 3–4, 397–410.
[3] Hamilton H., *Permutability of congruences on commutative semigroups*, Semigroup Forum **10** (1975/76), no. 1, 55–66.
[4] McKenzien R. N., McNulty G. F., Taylor W. F., *Algebras, Lattices, Varieties, Vol. I*, The Wadsworth & Brooks/Cole Mathematics Series, Wadsworth & Brooks/Cole Advanced Books & Software, Monterey, CA, 1987.
[5] Nagy A., *Special Classes of Semigroups*, Advances in Mathematics (Dordrecht), 1, Kluwer Academic Publishers, Dordrecht, 2001.
[6] Pálfy P. P., Pudlák P., *Congruence lattices of finite algebras and intervals in subgroup lattices of finite groups*, Algebra Universalis **11** (1980), no. 1, 22–27.
[7] Pálfy P. P., Saxl J., *Congruence lattices of finite algebras and factorizations of groups*, Comm. Algebra **18** (1990), no. 9, 2783–2790.
[8] Vernikov B. M., *On congruences of G-sets*, Comment. Math. Univ. Carolin. **38** (1997), no. 3, 601–611.