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ALL MAXIMAL COMPLETELY REGULAR SUBMONOIDS OF $Hyp_G(2)$

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Abstract

In this paper we consider mappings σ which map the binary operation symbol f to the term $\sigma(f)$ which do not necessarily preserve the arity. These mapping are called generalized hypersubstitutions of type $\tau = (2)$ and we denote the set of all these generalized hypersubstitutions of type $\tau = (2)$ by $Hyp_G(2)$. The set $Hyp_G(2)$ together with a binary operation defined on this set and the identity generalized hypersubstitution which maps f to the term $f(x_1, x_2)$ forms a monoid. In this paper, we determine all maximal completely regular submonoids of this monoid.

Keywords: generalized hypersubstitution, regular element, completely regular.

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References

[1] A. Boonmee and S. Leeratanavalee, *All completely regular elements in $Hyp_G(n)$*, Discuss. Math. Gen. Alg. and Appl. **33** (2013) 211–219. doi:10.7151/DMGAA.1203

[2] K. Denecke, D. Lau, R. Pöschel and D. Schweigert, *Hyperidentities, hyperequational classes and clone congruences*, Contributions to General Algebra **7** (Verlag Holder-Pichler-Tempsky, Wein, 1991) 97–118.

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[3] W. Puninagool and S. Leeratanavalee, *All regular elements in $Hyp_G(2)$*, Kyungpook Math. J. **51** (2011) 139–143.
doi:10.5666/KMJ.2011.51.2.139

[4] W. Puninagool and S. Leeratanavalee, *The monoid of generalized hypersubstitutions of type $\tau = (n)$*, Discuss. Math. Gen. Alg. and Appl. **30** (2010) 173–191.

[5] J.M. Howie, Fundamentals of Semigroup Theory (Academic Press, London, 1995).

[6] M. Petrich and N.R. Reilly, Completely Regular Semigroups (John Wiley and Sons, Inc., New York, 1999).

[7] S. Leeratanavalee and K. Denecke, *Generalized Hypersubstitutions and Strongly Solid Varieties*, General Algebra and Applications, Proc. of the "59 th Workshop on General Algebra, "15 th Conference for Young Algebraists Potsdam 2000" (Shaker Verlag, 2000) 135–145.

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