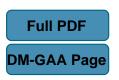
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ALL COMPLETELY REGULAR ELEMENTS IN $Hyp_G(n)$

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Abstract

In Universal Algebra, identities are used to classify algebras into collections, called varieties and hyperidentities are use to classify varieties into collections, called hypervarities. The concept of a hypersubstitution is a tool to study hyperidentities and hypervarieties.

Generalized hypersubstitutions and strong identities generalize the concepts of a hypersubstitution and of a hyperidentity, respectively. The set of all generalized hypersubstitutions forms a monoid. In this paper, we determine the set of all completely regular elements of this monoid of type $\tau = (n)$.

Keywords: generalized hypersubstitution, regular element, completely regular element.

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References

[1] J. Aczèl, Proof of a theorem of distributive type hyperidentities, Algebra Universalis 1 (1971) 1–6.

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- [2] V.D. Belousov, System of quasigroups with generalized identities, Uspechi Mat. Nauk. 20 (1965) 75–146.
- [3] A. Boonmee and S. Leeratanavalee, Factorisable of Generalized Hypersubstitutions of type $\tau = (2)$, Wulfenia Journal **20** (9) (2013) 245–258.
- [4] K. Denecke, D. Lau, R. Pöschel and D. Schweigert, *Hyperidentities, hyperequational classes and clone congruences*, Contributions to General Algebra 7, Verlag Hölder-Pichler-Tempsky, Wein (1991) 97–118.
- [5] W. Puninagool and S. Leeratanavalee, The Monoid of Generalized Hypersubstitutions of type $\tau=(n)$, Discuss. Math. General Algebra and Applications **30** (2010) 173–191.doi:10.7151/dmgaa.1168
- [6] J.M. Howie, Fundamentals of Semigroup Theory (Academic Press, London, 1995).
- [7] M. Petrich and N.R. Reilly, Completely Regular Semigroups (John Wiley and Sons, Inc., New York, 1999).
- [8] 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.
- [9] W.D. Newmann, Mal'cev conditions, spectra and Kronecker product, J. Austral. Math. Soc (A) 25 (1987) 103–117.
- [10] W. Taylor, Hyperidentities and hypervarieties, Aequationes Math. 23 (1981) 111–127.

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