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THE CLONE OF $K^*(n,r)$-FULL TERMS

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Dedicated to Professor Klaus Denecke on the occasion of 75th birthday

Abstract

Let τ_n be a type of algebras in which all operation symbols have arity n, for a fixed $n \geq 1$. For $0 < r \leq n$, this paper introduces a special kind of n-ary terms of type τ_n called $K^*(n,r)$-*full terms*. The set of all $K^*(n,r)$-full terms of type τ_n is closed under the superposition operation S^n; hence forms a clone denoted by $clone_{K^*(n,r)}(\tau_n)$. We prove that $clone_{K^*(n,r)}(\tau_n)$ is a Menger algebra of rank n. We study $K^*(n,r)$-full hypersubstitutions and the related $K^*(n,r)$-full closed identities and $K^*(n,r)$-full closed varieties. A connection between identities in $clone_{K^*(n,r)}(\tau_n)$ and $K^*(n,r)$-full closed identities is established. The results obtained generalize the results of Denecke and Jampachon [K. Denecke and P. Jampachon, *Clones of full terms*, Algebra and Discrete Math. 4 (2004) 1–11].

Keywords: restricted range transformation, full term, clone, Menger algebra, hypersubstitution, hyperidentity, solid variety.

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