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 $\text{clone}_{K^*(n, r)}(\tau_n)$. We prove that $\text{clone}_{K^*(n, r)}(\tau_n)$ 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 $\text{clone}_{K^*(n, r)}(\tau_n)$ 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].

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