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M-SOLID GENERALIZED NON-DETERMINISTIC VARIETIES

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Abstract

A generalized non-deterministic hypersubstitution is a mapping which maps operation symbols of type τ to the set of terms of the same type which does not necessarily preserve the arity. We apply the generalized non-deterministic hypersubstitution to an algebra of type τ and obtain a class of derived algebras of type τ. The generalized non-deterministic hypersubstitutions can be also applied to sets of equations of type τ. We obtain two closure operators which turn out to be a conjugate pair of completely additive closure operators. This allows us to apply the theory of conjugate pairs of additive closure operators to characterize M-solid generalized non-deterministic varieties of algebras.

Keywords: generalized non-deterministic hypersubstitution, conjugate pair of additive closure operators, M-solid generalized non-deterministic variety.

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