COMMON LOOK TO STATE-MORPHISM MV-ALGEBRAS AND STATE-MORPHISM ALGEBRAS

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Abstract

In the last decade, the interest to probabilistic uncertainty in many valued logic increased. A new approach to states on MV-algebras was recently presented by T. Flaminio and F. Montagna in [6]; they added a unary operation, τ, (called as an inner state or a state-operator) to the language of MV-algebras, which preserves the usual properties of states. It presents a unified approach to states and probabilistic many valued logic in a logical and algebraic settings.

We recall that a *state MV-algebra* is a couple (A, τ), where τ is a mapping from A into itself such that satisfying, for each $x, y \in A$:

   (i) $\tau(0) = 0$,
   (ii) $\tau(x^*) = (\tau(x))^*$,
   (iii) $\tau(x \oplus y) = \tau(x) \oplus \tau(y \odot (x \odot y)^*)$,
   (iv) $\tau(\tau(x) \oplus \tau(y)) = \tau(x) \oplus \tau(y)$;

the operator τ is said to be a *state-operator*.

In [2, 5], the authors studied a subvariety of state MV-algebras, called *state-morphism MV-algebras* as state-MV-algebras (A, τ) such that τ is an MV-homomorphism from A into itself such that $\tau \circ \tau = \tau$, called a *state-morphism-operator*.

In the talk, we show how subdirectly irreducible elements can be described, not only for state morphism MV-algebras but also for state-morphism algebras (A, τ), where the algebra A is a general one of a given type, [1, 4], as well as the variety generators will be presented.

References

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