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On tense MV-algebras. (English) Zbl 1335.03069

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Summary: The main aim of this article is to study tense MV-algebras which are just MV-algebras with new unary operations G and H which express a universal time quantifiers. Tense MV-algebras were introduced by *D. Diaconescu* and *G. Georgescu* [Fundam. Inform. 81, No. 4, 379–408 (2007; [Zbl 1136.03045](#))]. Using a new notion of an fm-function between MV-algebras we settle a half of their Open problem about representation for some classes of tense MV-algebras, i.e., we show that any tense semisimple MV-algebra is induced by a time frame analogously to classical works in this field of logic. As a by-product we obtain a new characterization of extremal states on MV-algebras. Our method gives a general framework for representing functions with the so-called Jauch-Piron property (including MV-morphisms) between MV-algebras.

MSC:

[03G25](#) Other algebras related to logic

[06D35](#) MV-algebras

Cited in **10** Documents

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tense operators; MV-algebras; predicate logic

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