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SELECTED PROPERTIES OF SOME GENERALIZATIONS OF BCK ALGEBRAS

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Abstract

The notion of a RM algebra, introduced recently, is a generalization of many other algebras of logic. The class of RM algebras contains (weak-)BCC algebras, BCH algebras, BCI algebras, BCK algebras and many others. A RM algebra is an algebra $\mathcal{A} = (A; \to, 1)$ of type $(2, 0)$ satisfying the identities: $x \to x = 1$ and $1 \to x = x$. In this paper we study the set of maximal elements of a RM algebra, branches of a RM algebra and moreover translation deductive systems of a RM algebra giving so called the Representation Theorem for RM algebras.

Keywords: RM algebra, deductive system.

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References

[1] Q.P. Hu and X. Li, *On BCH-algebras*, Math. Seminar Notes **11** (1983) 313–320.

[2] Y. Imai and K. Iséki, *On axiom systems of propositional calculi* XIV, Proc. Japan Acad. **42** (1966) 19–22.
doi:10.3792/pja/1195522169

[3] A. Iorgulescu, *New generalizations of BCI, BCK and Hilbert algebras – Part* I, J. Multiple-Valued Logic and Soft Comp. **27** (2016) 353–406.

[4] A. Iorgulescu, *New generalizations of BCI, BCK and Hilbert algebras – Part* II, J. Mult.-Valued Logic Soft Comput. **27** (2016) 407–456.

[5] K. Iséki, *An algebra related with a propositional calculus*, Proc. Japan Acad. **42** (1966) 26–29.
doi:10.3792/pja/1195522171

[6] B.L. Meng, *CI-algebras*, Sci. Math. Japon. e-2009, 695–701.

[7] B.L. Meng, *Closed filters in CI-algebras*, Sci. Math. Japon. **71** (2010) 201–207.

[8] D.J. Meng, *BCI-algebras and abelian groups*, Math. Japon. **32** (1987) 693–696.

[9] A. Walendziak, *Deductive systems and congruences in RM algebras*, J. Mult.-Valued Logic Soft Comput. **30** (2018) 521–539.

[10] R. Ye, *Selected paper on BCI/BCK-algebras and Computer Logics* (Shaghai Jiaotong University Press, 1991) 25–27.

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