

COMPLICATED BE-ALGEBRAS AND CHARACTERIZATIONS OF IDEALS

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Abstract

In this paper, using the notion of upper sets, we introduced the notions of complicated BE-Algebras and gave some related properties on complicated, self-distributive and commutative BE-algebras. In a self-distributive and complicated BE-algebra, characterizations of ideals are obtained.

Keywords: BE-algebras, complicated BE-algebras, ideals in BE-algebras.

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REFERENCES

- [1] J.C. Abbott, Sets, Lattices and Boolean Algebras (Allyn and Bacon, Boston, 1969).
- [2] S.S. Ahn and K.K. So, *On ideals and upper sets in BE-algebras*, Sci. Math. Jpn. **68** (2) (2008) 279–285.
- [3] S.S. Ahn and K.K. So, *On generalized upper sets in BE-algebras*, Bull. Korean Math. Soc. **46** (2) (2009) 281–287. doi:10.4134/BKMS.2009.46.2.281
- [4] S.S. Ahn, Y.H. Kim and J.M. Ko, *Filters in commutative BE-algebras*, Commun. Korean Math. Soc. **27** (2) (2012) 233–242. doi:10.4134/CKMS.2012.27.2.233
- [5] Q.P. Hu and X. Li, *On BCH-algebras*, Math. Sem. Notes Kobe Univ. **11** (2) (1983) 313–320.

- [6] Q.P. Hu and X. Li, *On proper BCH-algebras*, Math. Japon. **30** (4) (1985) 659–661.
- [7] J. Meng and Y.B. Jun, BCK-algebras (Kyung Moon Sa Co. Seoul-Korea, 1994).
- [8] Y. Imai and K. Iseki, *On axiom system of propositional calculi XIV*, Proc. Japan Acad. **42** (1966) 19–22. doi:10.3792/pja/1195522169
- [9] K. Iséki and S. Tanaka, *An introduction to the theory of BCK-Algebras*, Math. Japon. **23** (1) (1978/79) 1–26.
- [10] K. Iséki, *On BCI-algebras*, Math. Sem. Notes Kobe Univ. **8** (1980) 125–130.
- [11] Y.B. Jun, E.H. Roh and H.S. Kim, *On BH-algebras*, Sci. Math. Japon. **1** (3) (1998) 347–354.
- [12] Y.B. Jun, Y.H. Kim and K.A. Oh, *Subtraction algebras with additional conditions*, Commun. Korean Math. Soc. **22** (2007) 1–7.
- [13] C.B. Kim and H.S. Kim, *On BM-algebras*, Sci. Math. Japon. **63** (3) (2006) 421–427.
- [14] H.S. Kim and Y.H. Kim, *On BE-algebras*, Sci. Math. Japon. **66** (2007) 113–116.
- [15] H.S. Kim and Y.H. Yon, *Dual BCK-algebra and MV-algebra*, Sci. Math. Jpn. **66** (2) (2007) 247–353.
- [16] J. Neggers and H.S. Kim, *On d-algebras*, Math. Slovaca **49** (1999) 19–26.
- [17] J. Neggers, *On B-algebras*, Mat. Vesnik **54** (1–2) (2002) 21–29.
- [18] J. Neggers, *A fundamental theorem of B-homomorphism for B-algebras*, Int. Math. J. **2** (3) (2002) 215–219.
- [19] B.M. Schein, *Difference Semigroups*, Comm. Algebra **20** (1992) 2153–2169. doi:10.1080/00927879208824453
- [20] A. Walendziak, *Some axiomatizations of B-algebras*, Math. Slovaca **56** (3) (2006) 301–306.
- [21] A. Walendziak, *On commutative BE-algebras*, Sci. Math. Jpn. **69** (2) (2009) 281–284.
- [22] B. Zelinka, *Subaction Semigroups*, Math. Bohemica **120** (1995) 445–447.

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