

SUPERIOR SUBALGEBRAS AND IDEALS OF BCK/BCI-ALGEBRAS

YOUNG BAE JUN

*The Research Institute of Natural Science
Department of Mathematics Education
Gyeongsang National University
Jinju 52828, Korea
e-mail:* skywine@gmail.com

AND

SEOK ZUN SONG¹

*Department of Mathematics
Jeju National University
Jeju 690-756, Korea
e-mail:* szsong@jejunu.ac.kr

Abstract

The notions of superior subalgebras and (commutative) superior ideals are introduced, and their relations and related properties are investigated. Conditions for a superior ideal to be commutative are provided.

Keywords: superior mapping, superior subalgebra, (commutative) superior ideal.

2010 Mathematics Subject Classification: 06F35, 03G25, 06A11.

REFERENCES

- [1] J. D. Bashford and P. D. Jarvis, *The genetic code as a periodic table: algebraic aspects*, BioSystems **57** (2000) 147–161. doi:10.1016/S0303-2647(00)00097-6
- [2] L. Frappat, A. Sciarrino and P. Sorba, *Crystallizing the genetic code*, J. Biological Physics **27** (2001) 1–34. doi:10.1023/A:1011874407742
- [3] Y. Huang, *BCI-algebra* (Science Press, Beijing, 2006). ISBN 97-7-03-015411.

¹Corresponding author.

- [4] K. Iséki and S. Tanaka, *An introduction to the theory of BCK-algebras*, Math. Japonica **23** (1978) 1–26.
- [5] Y.B. Jun and S.Z. Song, *Codes based on BCK-algebras*, Inform. Sci. **181** (2011) 5102–5109. doi:10.1016/j.ins.2011.07.006
- [6] M.K. Kinyon and A.A. Sagle, *Quadratic dynamical systems and algebras*, J. Diff. Equ. **117** (1995) 67–126. doi:10.1006/jdeq.1995.1049
- [7] J. Meng, *Commutative ideals in BCK-algebras*, Pure Appl. Math. (in China) **9** (1991) 49–53.
- [8] J. Meng, *On ideals in BCK-algebras*, Math. Japonica **40** (1994) 143–154.
- [9] J. Meng and Y.B. Jun, BCK-algebras (Kyungmoon Sa Co. Seoul, 1994).
- [10] R. Sáánchez, R. Grau and E. Morgado, *A novel Lie algebra of the genetic code over the Galois field of four DNA bases*, Mathematical Biosciences **202** (2006) 156–174. doi:10.1016/j.mbs.2006.03.017
- [11] J.J. Tian and B.L. Li, *Coalgebraic structure of genetics inheritance*, Mathematical Biosciences and Engineering **1** (2004) 243–266. PMID: 20369970 [PubMed].

Received 12 November 2015

Revised 31 January 2016