

COMPLETELY ARCHIMEDEAN SEMIRINGS

SUNIL K. MAITY¹

Department of Pure Mathematics, University of Calcutta
35, Ballygunge Circular Road, Kolkata – 700019, India

e-mail: skmpm@caluniv.ac.in

AND

RUMPA CHATTERJEE

Department of Mathematics, University of Burdwan
Golapbag, Burdwan – 713104, West Bengal, India

e-mail: rumpachatterjee13@gmail.com

Abstract

In this paper we give a structural description of completely Archimedean semirings which is an extension of the structure theorem of completely Archimedean semigroups.

Keywords: completely simple semiring, completely Archimedean semiring, Rees matrix semiring, nil-extension, bi-ideal.

2010 Mathematics Subject Classification: 16A78, 20M07, 20M10.

REFERENCES

- [1] J.L. Galbiati and M.L. Veronesi, *On quasi completely regular semigroups*, Semigroup Forum **29** (1984) 271–275.
doi:10.1007/BF02573335
- [2] J.M. Howie, *Introduction to the theory of semigroups* (Academic Press, 1976).
- [3] J.S. Golan, *The Theory of Semirings with Applications in Mathematics and Theoretical Computer Science* (Pitman Monographs and Surveys in Pure and Applied Mathematics, 54, Longman Scientific, 1992).
- [4] M.K. Sen, S.K. Maity and K.P. Shum, *On Completely Regular Semirings*, Bull. Cal. Math. Soc. **98** (2006) 319–328.

¹Corresponding author.

- [5] M.K. Sen, S.K. Maity and H.J. Weinert, *Completely Simple Semirings*, Bull. Cal. Math. Soc. **97** (2005) 163–172.
- [6] M. Petrich and N.R. Reilly, *Completely regular semigroups* (Wiley, New York, 1999).
- [7] S. Bogdanović, *Semigroups with a system of subsemigroups* (Novi Sad, 1985).
- [8] S. Bogdanović and S. Milić, *A nil-extension of a completely simple semigroup*, Publ. Inst. Math. (Beograd) (N.S.) **36** (1984) 45–50.
- [9] S.K. Maity and R. Ghosh, *On Quasi Completely Regular Semirings*, Semigroup Forum **89** (2014) 422–430.
doi:10.1007/s00233-014-9579-y
- [10] S.K. Maity and R. Ghosh, *Nil-extension of a Completely Simple Semiring*, Discuss. Math. Gen. Alg. Appl. **33** (2013) 201–209.
doi:10.7151/dgmaa.1206
- [11] S. Milić and V. Pavlović, *Semigroups in which some ideal is a completely simple semigroup*, Publ. Inst. Math. **30** (1982) 123–130.

Received 27 November 2017

Revised 28 March 2018

Accepted 11 April 2018