Some properties of idempotents of $(n, m)-$semirings

ADINA POP

ABSTRACT.

In this paper, we investigate some properties of the additive and multiplicative idempotents of an $(n, m)-$semiring. In particular, the research is focused on differences between $(n, m)-$semirings, $n, m \geq 3$ and usual semirings.

REFERENCES

[1] Alam, S. E., Rao, S. and Davvaz, B., $(m, n)-$Semirings and a generalized fault-tolerance algebra of systems, J. Appl. Math., vol. **2013**, Article ID 482391, 10 pages, 2013

[2] Crombez G., On $(n, m)-$rings, Abh. Math. Sem. Univ. Hamburg, **37** (1972), 81–199

[3] Dixit, V. N. and Dewan, S., Congruences and Green's equivalence relation on ternary semigroups, Commun. Fac. Sci. Univ.Ank. Series A1 V., **46** (1997), 103–117

[4] Dörnte, W., Untersuchungen über einen veralgemeinerten Gruppenbegriff Math. Zeit, **29** (1928), 1–19

[5] Dutta, T. K. and Kar, S., On prime ideals and prime radical of ternary semirings, Bull. Cal. Math. Soc., **46** (2005), 445–454

[6] Golan, J. S. ,The theory of semirings with applications in mathematics and theoretical computer science Kluwer Academic Publishers, 1999

[7] Hebisch, U. and Weinert, H. J., Semirings. Algebraic theory and applications in computer science, World Scient. Publ., 1999

[8] Kar, S., Ternary Semirings. An Introduction, VDM Verlag Dr. Müller Aktiengessllschaft, 2010, ISBN: 978-3-639-00401-4

[9] Pop, A., On embeding theorem of (m, n)-semirings, Bul. Ştiinţ. Univ. Baia Mare, Ser. B, Fasc. Mat. Inf., vol. **16** (2000), Nr. 2, 297–302

[10] Pop, A., On the boundary of algebraic radicals in topological $(n, m)-$semirings, Creat. Math. Inform., **22** (2013), No. 2, 215–222

[11] Pop, A., Contribuţii la teoria $(n, m)-$semiinelor şi $n-$semigrupurilor, Teză de doctorat, Univ. Tehnică din Cluj-Napoca, CUNBM, 2014

[12] Pop, S. M. and Pop, A., Some functorial properties of reduced (n,2)-semirings of (n,m)-semirings, Bull. for Applied & Comp. Math. PAMM, BAM-2076, **CVI** (2003), Nr. 2102, Budapest, 91–96

[13] Pop, S. M., Contribuţii la teoria $n-$semigrupurilor, Teză de doctorat, Univ. Babeş Bolyai, Cluj-Napoca, 1979

[14] Post, E. L., Polyadic groups, Trans. Amer. Math. Soc., **48** (1940), 208–350

[15] Siosson, F. M., Cyclic and homogeneus $m-$Semigroups, Proc. Japan Acad., **39** (1963), No. 7, 444–449

[16] Siosson, F. M., Ideals in $(m + 1)-$semigroups, Annali di Mat. Pub. and Appl., **LXVIII** (1965), 161–200

[17] Vandiver, H. S., Note on a simple types of algebra in which the cancellation law of addition does not hold, Bull. Amer. Math. Soc., **40** (1934), 914–920

[18] Zhu, Y., On the Jacobson radical of an $(m, n)-$semirings, Algebra, 2013, Algebra, Article ID 272104, 9 pages http://dx.doi.org/10.1155/2013/272104.

NORTH UNIVERSITY CENTER AT BAIA MARE
TECHNICAL UNIVERSITY OF CLUJ-NAPOCA
DEPARTMENT OF MATHEMATICS
VICTORIEI 76
430122 BAIA MARE, ROMANIA
E-mail address: `adina_pop_2006@yahoo.com`