

FROM $\vee e$ -SEMIGROUPS TO HYPERSEMIGROUPS

NIOVI KEHAYOPULU

Department of Mathematics
University of Athens
15784 Panepistimiopolis, Greece

e-mail: nkehayop@math.uoa.gr

Abstract

A *poe*-semigroup is a semigroup S at the same time an ordered set having a greatest element “ e ” in which the multiplication is compatible with the ordering. A $\vee e$ -semigroup is a semigroup S at the same time an upper semilattice with a greatest element “ e ” such that $a(b \vee c) = ab \vee ac$ and $(a \vee b)c = ac \vee bc$ for every $a, b, c \in S$. If S is not only an upper semilattice but a lattice, then it is called *le*-semigroup. From many results on *le*-semigroups, $\vee e$ -semigroups or *poe*-semigroups, corresponding results on ordered semigroups (without greatest element) can be obtained. Related results on hypersemigroups or ordered hypersemigroups follow as application. An example is presented in the present note; the same can be said for every result on these structures. So order-lattices play an essential role in studying the hypersemigroups and the ordered hypersemigroups.

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