Discussiones Mathematicae
General Algebra and Applications 34 (2014) 55–57
doi:10.7151/dmgaa.1217

CHARACTERIZATIONS OF ORDERED Γ-ABEL-GRASSMANN'S GROUPOIDS

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Abstract

In this paper, we introduced the concept of ordered Γ-AG-groupoids, Γ-ideals and some classes in ordered Γ-AG-groupoids. We have shown that every Γ-ideal in an ordered Γ-AG**-groupoid S is Γ-prime if and only if it is Γ-idempotent and the set of Γ-ideals of S is Γ-totally ordered under inclusion. We have proved that the set of Γ-ideals of S form a semilattice, also we have investigated some classes of ordered Γ-AG**-groupoid and it has shown that weakly regular, intra-regular, right regular, left regular, left quasi regular, completely regular and $(2, 2)$-regular ordered Γ-AG**-groupoids coincide. Further we have proved that every intra-regular ordered Γ-AG**-groupoid is regular but the converse is not true in general. Furthermore we have shown that non-associative regular, weakly regular, intra-regular, right regular, left regular, left quasi regular, completely regular, $(2, 2)$-regular and strongly regular Γ-AG*-groupoids do not exist.

Keywords: ordered Γ-AG-groupoids, Γ-ideals, regular Γ-AG**-groupoids.

2010 Mathematics Subject Classification: 20M10, 20N99.

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Received 9 August 2013
Revised 24 January 2014