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WREATH PRODUCT OF A SEMIGROUP AND A Γ-SEMIGROUP

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Abstract

Let $S = \{a, b, c, \dots\}$ and $\Gamma = \{\alpha, \beta, \gamma, \dots\}$ be two nonempty sets. S is called a Γ-semigroup if $a\alpha b \in S$, for all $\alpha \in \Gamma$ and $a, b \in S$ and $(a\alpha b)\beta c = a\alpha(b\beta c)$, for all $a, b, c \in S$ and for all $\alpha, \beta \in \Gamma$. In this paper we study the semidirect product of a semigroup and a Γ-semigroup. We also introduce the notion of wreath product of a semigroup and a Γ-semigroup and investigate some interesting properties of this product.

Keywords: semigroup, Γ-semigroup, orthodox semigroup, right(left) orthodox Γ-semigroup, right(left) inverse semigroup, right(left) inverse Γ-semigroup, right(left)α- unity, Γ-group, semidirect product, wreath product.

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