

Automorphisms of Direct Product of Monogenic Semigroups and Monoids

Karim Ahmadidelir

Mathematics Department, Faculty of Basic Sciences

Islamic Azad University - Tabriz Branch

Tabriz, Iran

kdelir@gmail.com

Abstract

This talk investigates the automorphism group of monogenic semigroups (or monoids) to find its relationship with the automorphism group of cyclic groups. Then by considering a presentation for direct product of monogenic semigroups verifies the relationship between the automorphism group of that and the automorphism group of the group presented by their semigroup presentations. This study gives us some explicit formulas for computing the order of automorphism groups of these algebraic structures.

AMS subject Classification 2010: 20G40, 20M15, 20B25, 20H30, 20M99

Keyword and phrases: Automorphism groups of algebraic structures, Monogenic semigroups and monoids.

References

- [1] Ayik H., Campbell C. M. and O'connor J. J., On the efficiency of the direct products of monogenic monoids, *Algebra Colloquium*, **14:2**, (2007), 279-284.
- [2] Campbell C. M., Robertson E. F., Ruskuc N. and Thomas R. M., Semigroup and group presentations, *Bull. London Math. Soc.*, **27**, (1995), 46-50.
- [3] Hillar C. J. and Rhea D. L., Automorphisms of finite abelian groups, *Amer. Math. Monthly*, **114(10)**, (2007), 917-922.
- [4] Levi I. and Wood G. R., On automorphisms of transformation semigroup, *Semigroup Forum*, **48**, (1994), 63-70.
- [5] Sullivan R. P., Automorphisms of transformation semigroup, *J. Australian Math. Soc.*, **20**, (1975), 77-84.