

SOME RESULTS ON COMMUTATORS IN MULTIGROUP FRAMEWORK

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Abstract: Multigroup is a group-like algebraic structure drawn from multiset whose underlying set is a group. The concept of commutators in multigroup context has been hitherto introduced in literature. The purpose of this paper is to further explore the idea of commutators in the light of multigroups. A number of some related results are obtained and characterized. The idea of admissible submultigroups A and B of $C \in MG(X)$ under an operator domain $\mathcal{D}$ is explicated, and it is shown that (A, B) and $[A, B]$ are $\mathcal{D}$ -admissible.

Keywords and Phrases: Commutator, Multiset, Multigroup, Submultigroup.

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1. Introduction

The idea of multisets as noted in [20], was first suggested by N. G. de Bruijn (cf. [5]) in a private communication to D. E. Knuth, as an important generalisation of crisp set theory, by violating a basic property of crisp sets that an element can belong to a set only once. The notion of multisets is a boost to the concept of multigroups via multisets, which generalises group theory. In [21], the concept of multigroups in multisets framework was proposed and a number of results were obtained. The notion is analogous to other non-classical groups (e.g., fuzzy groups [22], etc.). A complete survey on the concept of multigroups was carried out in [7, 17], and it was established that multigroup via multiset is a generalisation of group theory.