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RESEARCH PAPER

Near-ring congruences on seminearrings

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Abstract
While establishing the bijection between near-ring congruences and various types of ideals of seminearrings, different kinds of restrictions were imposed either on the seminearrings under consideration or on the near-ring congruences. In this paper we consider a seminearring S without any restriction and establish that there exists an inclusion preserving bijective correspondence between the set $\{I \subseteq S : I$ is a strong, dense, reflexive and closed additive subsemigroup of S with $IS \subseteq I\}$ and the set of all near-ring congruences on S. We also show that in any seminearring S, there exists an inclusion preserving bijective correspondence between the set $\{I \subseteq S : I$ is a strong, dense, reflexive and closed additive subsemigroup of S with $IS, SI \subseteq I\}$ and the set of all zero-symmetric near-ring congruences on S.

Keywords Near-ring congruence · Zero-symmetric near-ring congruence · Strong · Dense · Reflexive · Closed

1 Introduction

According to G. Pilz [10], a *near-ring* is a non-empty set N together with two binary operations '$+$' and '$\cdot$' such that (i) $(N, +)$ is a group (not necessarily abelian), (ii)

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