NEAR GROUPS ON NEARNESS APPROXIMATION SPACES

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Abstract

Near set theory provides a formal basis for observation, comparison and classification of perceptual granules. In the near set approach, every perceptual granule is a set of objects that have their origin in the physical world. Objects that have, in some degree, affinities are considered perceptually near each other, i.e., objects with similar descriptions. In this paper, firstly we introduce the concept of near groups, near subgroups, near cosets, near invariant sub-groups, homomorphisms and isomorphisms of near groups in nearness approximation spaces. Then we give some properties of these near structures.

Keywords: Near set, Rough set, Approximation space, Nearness approximation space, Near group.


1. Introduction

In 1982, the concept of a rough set was originally proposed by Pawlak [13] as a formal tool for modelling incompleteness and imprecision in information systems. The theory of rough sets is an extension of set theory, in which a subset of a universe is described by a pair of ordinary sets called the lower and upper approximations. A basic notion in the Pawlak rough set model is an equivalence relation. The equivalence classes are the building blocks for the construction of the lower and upper approximations. The lower approximation of a given set is the union of all the equivalence classes which are subsets of the set, and the upper approximation is the union of all the equivalence classes which have a non-empty intersection with the set.

An algebraic approach to rough sets has been given by Iwinski [7]. Afterwards, Biswas and Nanda [1] introduced the notion of rough subgroups. Kuroki in [8], introduced the notion of a rough ideal in a semigroup. Kuroki and Wang [9] gave some properties of

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