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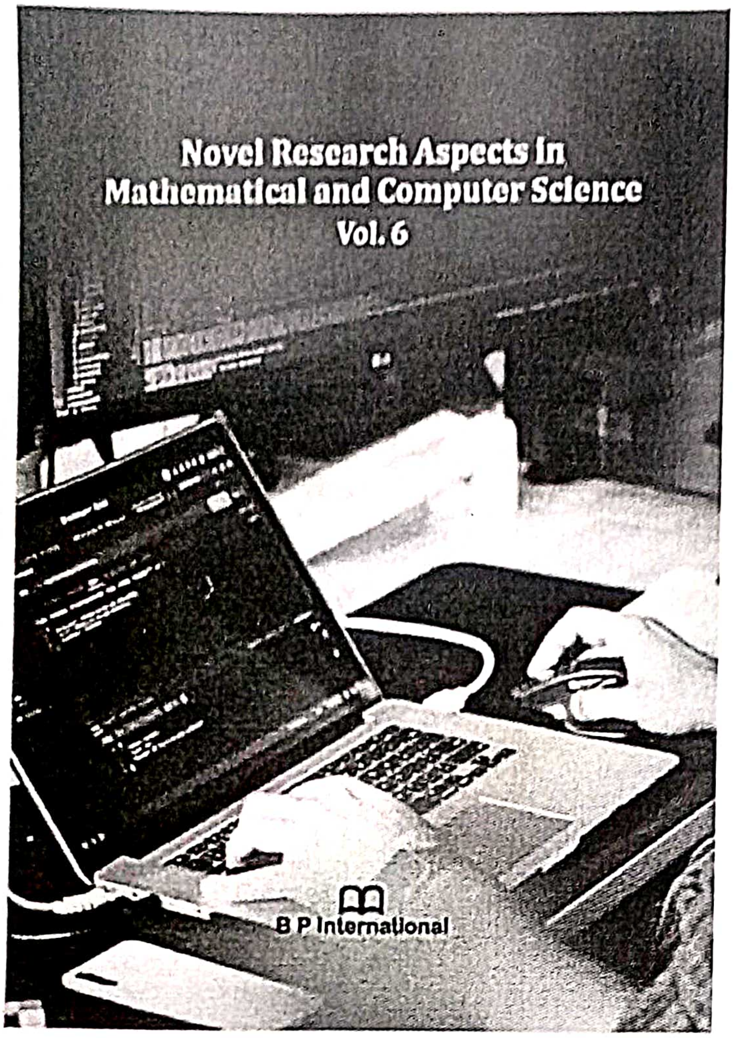

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Dr. Luigi Giacomo Rodino,
Professor, Department of Mathematics, University of Turin, Italy.

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δJ-Closed Sets in Topological Spaces

K. P. Vethavarna [a] and P. L. Meenakshi [a*]

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Abstract

In this chapter, a new class of sets δJ-closed sets is initiated in topological spaces. The properties and relationships with other g-closed sets are analysed. Some important characterizations are obtained.

Keywords: Topological spaces; g-closed sets; topology; partition space.

1 Introduction

In 1937, Stone [1] introduced regular open sets and used it to define the semi-regularization of a topological space. In 1968, Velicko [2] proposed δ-open sets which are stronger than open sets. Levine [3] has brought generalized closed sets in 1970. Dunham [4] has established a generalized closure using Levine's generalized closed sets as Cl*In 2016, Annalakshmi [5] has instituted regular*-open sets using Cl*. In 2018, PL.Meenakshi [6] have introduced a class of new sets namely η *-open sets [6] which is placed between the classes of δ-Open set and open set. In this paper, δJ-closed sets are introduced using η *-open sets and their features are studied.

2 Preliminaries

Definition 2.1 Let (Y, ζ) be a topological space. If D is a non-empty subset of (Y, ζ) then the intersection of all closed sets containing D is called ***closure of D*** and is denoted by Cl(D). The union of all open sets contained in D is called ***interior of D*** and is denoted by int(D).

Definition 2.2 If A is a subset of a space (Y, ζ).

(i) The ***generalized closure*** of D [4] is defined as the intersection of all g-closed sets in Y containing D and is denoted by Cl*(D).

(ii) The ***generalized interior*** of D [4] is defined as the union of all g-open sets in Y contained in D and is denoted by int*(D).

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[a] *Department of Mathematics, Avinashilingam Institute for Home Science and Higher Education for Women Coimbatore, India.*

**Corresponding author: E-mail: meenakshi_mat@avinuty.ac.in;*