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CLASS OF PARACOMPACTNESS IN FUZZY TOPOLOGICAL SPACES

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Abstract. Paracompactness is a natural generalization of compactness in topological space. Paracompactness and its associated tools have played a crucial role in the development of many areas of topology and analysis. The class of topological spaces such as countable paracompact, weakly and strongly paracompac, nearly paracompac, nearly weakly and nearly strongly paracompact has been investigated by many researchers.
In this paper author has introduced and studied the class of countable α - paracompact, nearly α-paracompact, nearly weakly and nearly strongly α - paracompact in fuzzy topological spaces (fts). Also the properties and characterization of these spaces are established.

Keywords. α-paracompactness, countable α-paracompact , nearly α-paracompactness, nearly strongly α- paracompactness, F-continuous, F-open surjection.

1 Introduction

In general topology countable paracompactness is introduced and studied by Dowker [1] and Katetov [7] in1951. Subsequently, such class of topological spaces has been investigated by many other researchers.

The concepts of α-shading family due to Gantner et al. [14] and α - local finiteness due to Desai [13] are used to introduce the concept of countable α-paracompactness in fts. It is proved that every α-compact fts due to Gantner et.al. [14] and α-paracompact fts due to Desai [13] is countably α-paracompact. Further it is also proved that every closed crisp subspace of a countably α-paracompact fts is countably α-paracompact. The invariance of countable α- paracompactness under F-continuous,F-open surjections is also obtained.

The concept of nearly paracompact spaces were introduced and studied in general topology by Singal and Arya [8] in1969, as a generalization of paracompact spaces. Subsequently many researchers including Kovacevic [5], Ergun ([10], [11]) and Arya [12] have studied this class of topological spaces.