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FUZZY PRE-γ-COMPACT, FUZZY PRE-γ-CONNECTED AND FUZZY PRE-γ-CLOSED SPACES

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Abstract: Compactness and connectedness play a crucial role in Topology. In this paper, we introduce concepts of fuzzy pre-γ-compact, fuzzy pre-γ-connected and fuzzy pre-γ-closed spaces by using concepts of fuzzy pre-γ-open sets. Then we study their properties and compare them.

Keywords and Phrases: Fuzzy pre-γ-open sets, fuzzy pre-γ-compact, fuzzy pre-γ-connected, fuzzy pre-γ-closed spaces.

2020 Mathematics Subject Classification: 54A05, 54A40, 54D05, 54D30.

1. Introduction

The notion of fuzzy sets was introduced by Zadeh in his paper [12]. By using the concept of fuzzy sets, Chang [1] introduced the idea of fuzzy topological space. The notion of fuzzy sets has been used by many researchers to several branches of Mathematics. Kasahara [7] defined the notion of an operation γ on a topological space. Kalitha and Das [6] introduced and investigated the operation γ on fuzzy topological spaces. The notion of pre-γ-open sets in general topological spaces was defined by Ibrahim [5]. Recently Sivashanmugaraja and Vadivel [11] introduced the notion of pre-γ-open fuzzy sets in fuzzy topological spaces. The aim of this paper is devoted to introduce and investigate the notion of pre-γ-compact, pre-γ-connected and pre-γ-closed spaces in fuzzy setting. Also we establish some basic theorems about it.