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FUZZY PRE β-COMPACT SPACE

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Abstract: This paper deals with a new type of compactness, viz., fuzzy pre β-compactness by using fuzzy pre β-open set [1] as a basic tool. We characterize this newly defined compactness by fuzzy net and prefilterbase. It is shown that this compactness implies fuzzy almost compactness [3] and the converse is true only on fuzzy pre β-regular space [1]. Afterwards, it is shown that this compactness remains invariant under fuzzy pre β-irresolute function [1].

Keywords and Phrases: Fuzzy pre β-open set, fuzzy pre β-regular space, fuzzy regularly pre β-closed set, fuzzy pre β-compact set (space), pre β-adherent point of a prefilterbase, pre β-cluster point of a fuzzy net.

2020 Mathematics Subject Classification: 54A40, 03E72.

1. Introduction

After introducing fuzzy compactness by Chang [2], many mathematicians have engaged themselves to introduce different types of fuzzy compactness. In [3], fuzzy almost compactness is introduced. In this paper we introduce fuzzy pre β-compactness which is weaker than fuzzy almost compactness. Here we use fuzzy net [8] and prefilterbase [6] to characterize fuzzy pre β-compactness.

2. Preliminaries

Throughout this paper, (X, τ) or simply by X we shall mean an fts. In 1965, L.A. Zadeh introduced fuzzy set [9] A which is a function from a non-empty set X