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# FUZZY PRE $\beta$ -COMPACT SPACE

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Abstract: This paper deals with a new type of compactness, viz., fuzzy pre  $\beta$ compactness by using fuzzy pre  $\beta$ -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  $\beta$ -regular space [1]. Afterwards, it is shown that this compactness
remains invariant under fuzzy pre  $\beta$ -irresolute function [1].

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

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# 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  $\beta$ -compactness which is weaker than fuzzy almost compactness. Here we use fuzzy net [8] and prefilterbase [6] to characterize fuzzy pre  $\beta$ -compactness.

## 2. Preliminaries

Throughout this paper,  $(X, \tau)$  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