

α -PRECOMPACT SPACE IN FUZZY TOPOLOGICAL SPACE

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(Received: Oct. 27, 2023 Accepted: Dec. 27, 2023 Published: Dec. 30, 2023)

Abstract: In this paper we introduce and study a new type of compactness, viz., fuzzy α -precompactness by using fuzzy α -preopen set [1] as a basic tool. Here we also characterize this space by fuzzy net and prefilterbase. We have shown that fuzzy α -precompactness implies fuzzy almost compactness [4] and the converse is true only on fuzzy α -preregular space [1].

Keywords and Phrases: Fuzzy α -preopen set, fuzzy α -preregular space, fuzzy regularly α -preclosed set, fuzzy α -precompact set (space), α -preadherent point of a prefilterbase, α -precluster point of a fuzzy net.

2020 Mathematics Subject Classification: 54A40, 03E72.

1. Introduction

In [4], fuzzy almost compactness is introduced. In this paper we introduce fuzzy α -precompactness which is weaker than fuzzy almost compactness. Here we use fuzzy net [8] and prefilterbase [6] to characterize fuzzy α -precompactness.

2. Preliminary

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 into the closed interval $I = [0, 1]$, i.e., $A \in I^X$. The support [9] of a fuzzy set A , denoted by $suppA$ and is defined by $suppA = \{x \in X : A(x) \neq 0\}$. The fuzzy set with the singleton support $\{x\} \subseteq X$ and the value t ($0 < t \leq 1$) will be denoted