

Fuzzy SSPO-separation Axioms and a new form of fuzzy compactness

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Abstract

In this paper, we introduce the concept of new separation axioms named fuzzy SSPO-separation axioms by using the fuzzy strongly semi pre-open sets and we also introduce and investigate properties of a new form of fuzzy compactness, α -SSPO compactness. We define and investigate the relation between fuzzy separation axioms, fuzzy pre-separation axioms, and different forms of fuzzy continuous mappings. We also investigate the existence of a countable base of fuzzy strongly semi pre-open sets, we define the concept of *SSPO* separability, the concept of α – *SSPO* Lindelof sets and examine their properties. With the concepts of fuzzy strong semi pre-continuity, *SSPO*-irresolute continuous mappings, and other forms of fuzzy continuity, we investigate the new concept of fuzzy compactness and its properties in regard to the mentioned mappings.

Key words: fuzzy separation axioms, fuzzy compactness, fuzzy topological space, fuzzy strongly semi pre-open set, fuzzy continuity, fuzzy *SSPO*-irresolute continuous mapping, fuzzy *SSPO*-irresolute open (closed) mapping, fuzzy *SSPO* homeomorphism.