

Fuzzy Almost Contra m -continuous Multifunction

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Abstract:

This paper deals with a new type of fuzzy multifunction between a set having minimal structure and a fuzzy topological space. Several characterizations and properties are established here. We also prove that the m -compact space [14, 15] has fuzzy strongly compact [18] image under surjective fuzzy upper almost contra m -continuous multifunction provided that some natural conditions are satisfied. Lastly, we have shown that this concept unifies fuzzy upper (lower) almost contra continuous multifunction [6].

Keywords:

m -open set, m -compact space, fuzzy regular closed set, fuzzy θ -semiclosed set, m -space, m -frontier of a set.

1. Introduction

In 1985, Papageorgiou introduced fuzzy multifunction [13] between a topological space and a fuzzy topological space (fts, for short) in the sense of Chang [8]. Afterwards, many mathematicians have engaged themselves to introduce different types of fuzzy multifunctions using different types of fuzzy open-like sets. In [14, 15], Popa and Noiri introduced minimal structure (m -structure, for short) on a non-empty set X whereas fuzzy minimal structure is introduced in [1]. In [5], we have introduced fuzzy upper (lower) M -continuous multifunctions between two sets having minimal structures. But here we introduce a fuzzy multifunction between a set having minimal structure and an fts.

2. Preliminaries

Let Y be a non-empty set and $I = [0, 1]$. Then a fuzzy set [19] A in Y is a mapping from Y into I . The set of all fuzzy sets in Y is denoted by I^Y . For a fuzzy set A in