

A STRONG FORM OF GENERALIZED CLOSED SET IN A FUZZY TOPOLOGICAL SPACE

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Abstract: In this paper a strong form of fuzzy generalized closed set, viz., fg^* -closed set is introduced and studied. With the help of this newly defined set, a new type of idempotent operator is introduced. Using this operator as a basic tool, here we introduce and study fg^* -open and fg^* -closed functions the class of which are strictly larger than that of fuzzy open (resp, fg -open) and fuzzy closed (resp., fg -closed) functions respectively and weaker than that of $fg\delta$ -open and $fg\delta$ -closed functions respectively. In the last section we introduce fg^* - T_2 -space the class of which is strictly larger than that of fuzzy T_2 -space and some applications of fg^* -open function are established here.

Keywords and Phrases: Fuzzy semiopen set, fuzzy regular open set, fuzzy δ -open set, fg -closed set, $fg\delta$ -closed set, fg^* -closed set, fg^* -open function, fg^* -closed function.

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1. Introduction

In 1965, L. A. Zadeh introduced fuzzy set [15] and in 1968, C. L. Chang introduced fuzzy topology [5]. Afterwards, many mathematicians have engaged themselves to introduce and study different types of fuzzy open-like sets. In 1981, K. K. Azad introduced fuzzy regular open and fuzzy semiopen set [1] and in [7], Ganguly and Saha introduced fuzzy δ -open set. In [2, 3], fuzzy generalized version of