

A NEW TYPE OF REGULARITY VIA FUZZY α -PREOPEN SET

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Abstract: This paper deals with a new type of set, viz., fuzzy α -preopen set, the class of which is strictly larger than that of fuzzy open set as well as fuzzy α -open set [4]. Using this newly defined fuzzy set, here we introduce and study fuzzy α -precontinuous and fuzzy α -preirresolute functions. It is shown that fuzzy α -preirresolute function is fuzzy α -precontinuous, but the converse may not be true, in general. Next we introduce fuzzy α -preregular space, in which fuzzy open set and fuzzy α -preopen set coincide. Lastly, some applications of the functions defined here are established.

Keywords and Phrases: Fuzzy α -open set, fuzzy α -preopen set, fuzzy α -nbd of a fuzzy point, fuzzy α -precontinuous function, fuzzy α -preregular space, fuzzy α -preirresolute function.

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1. Introduction

After introducing fuzzy topology by Chang [5], many mathematicians have engaged themselves to introduce different types of fuzzy open-like sets. In [7], fuzzy strongly preopen set and fuzzy strong precontinuous function are introduced and studied by using fuzzy preopen set [8] as a basic tool whereas in [3], fuzzy pre-semiopen set and fuzzy pre-semi-continuous function are introduced and studied by using fuzzy semiopen set [1] introduced by K. K. Azad. In [4], Bin Shahna introduced fuzzy α -open set. Using this set as a basic tool, here we introduce