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β^c-CLOSURE OPERATOR IN FUZZY SETTING

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Abstract: Fuzzy β-open set is introduced in [6]. Using this concept as a basic tool, in [2] we have introduced and studied fuzzy β^*-closure operator and fuzzy β^*-closed set. Here we introduce fuzzy β^c-closure operator and fuzzy β^c-closed set. This newly defined operator is coarser than fuzzy β-closure operator [6] and fuzzy β^*-closure operator. Also fuzzy β^c-closure operator is an idempotent operator. Then some mutual relationship of this operator with the operators defined in [2, 3, 4, 5, 6, 7, 8] are established. With the help of this operator a new type of fuzzy separation axiom is introduced. Lastly we characterize this operator via fuzzy net.

Keywords and Phrases: Fuzzy β-open set, fuzzy preopen set, fuzzy β^c-closed set, fuzzy β^c-regular space, β^c-convergence of a fuzzy net.

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1. Introduction

Many mathematicians have engaged themselves to introduce and study different types of fuzzy closure-like operators in fuzzy setting. In this context we have to mention [2, 3, 4, 5, 7, 8]. Using fuzzy β-open set, here we introduce and study fuzzy β^c-closed set and show that for any fuzzy set, fuzzy β-closure is weaker than fuzzy β^c-closure of this set and for a fuzzy open set these two operators coincide.

2. Preliminaries

Throughout the paper, by (X, τ) or simply by X we mean a fuzzy topological space (fts, for short) in the sense of Chang [5]. A fuzzy set A is a function from a