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ON $fg\gamma^*$-CLOSED SETS IN FUZZY TOPOLOGICAL SPACES

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Abstract. Starting with Chang [8], many mathematicians have engaged themselves to introduce different types of fuzzy closed-like sets in a fuzzy topological space (fts, for short). Afterwards, in [2, 3, 5, 6, 7] the notion of generalized versions of fuzzy closed set have been studied. In this paper a new type of generalized version of fuzzy γ-closed set is introduced and studied using γ-closed set as a basic tool.

1. Introduction

This paper deals with a new type of generalized version of closed set in fuzzy topological space, viz., $fg\gamma^*$-closed set using fuzzy γ-open set [4] as a basic tool. It is shown that the collection of all $fg\gamma^*$-closed sets is stronger than that of fuzzy γ-closed set [4], but weaker than that of $fg\gamma$-closed set [7]. Also the mutual relationship of this set with fgs^*-closed set [5], fsg-closed set [3], $fg\beta$-closed set [3] are established. Again we introduce a new type of closure operator, viz., $fg\gamma^*$-closure operator which is an idempotent operator. Afterwards, $fg\gamma^*$-open, $fg\gamma^*$-closed, $fg\gamma^*$-compactness and $fg\gamma^*$-irresolute functions are introduced and studied. Then establish the mutual relationship of these functions with fuzzy open function [18], fuzzy closed function [18] and fuzzy continuous function [8].

Keywords and phrases: Fuzzy γ-closed set, $fg\gamma^*$-closed set, $fg\gamma^*$-closed function, $fg\gamma^*$-open function, $fg\gamma^*$-continuous function, $fg\gamma^*$-irresolute function, fuzzy semiopen set.
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