A NEW TYPE OF REGULAR SPACE VIA FUZZY PREOPEN SETS

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Abstract. In this paper we introduce a new closure-like operator in fuzzy topological spaces, via fuzzy preopen sets. Then mutual relationships of this operator with several closure operators in fuzzy topological spaces, studied in [2, 3, 4, 6, 7, 8, 11, 12] are established. The newly introduced operator is idempotent in fuzzy spaces satisfying some regularity property with respect to this operator, but it is not idempotent in general. Some characterizations of the new operator via nets are given in the last section.

1. Introduction and Preliminaries

After the introduction of the notion of fuzzy closure operator by Chang in 1968 [9], various types of fuzzy closure-like operators have been introduced and studied. In this context we have to mention [2, 3, 4, 6, 7, 8, 11, 12, 13]. In this paper, a new type of closure-like operator is introduced and studied which is not an idempotent operator.

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