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SOME PROPERTIES OF FUZZY TOPOLOGICAL SPACES

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The purpose of this thesis is to introduce the concept of fuzzy bitopological space and to study some properties of fuzzy bitopological space.

In section II, we obtain some characterizations of pairwise α-compact *fbs* and give a counterexample. Also we show that the pairwise F-continuous image of pairwise α-compact *fbs* is pairwise α-compact.

In section III, we define some separation axioms of *fbs* and study some properties of *fbs* satisfying those separation axioms. We obtain the following main results.

(1) Let (X, P, Q) be a pairwise α-Hausdorff *fbs*. Then every P-α-compact set is Q-α-closed and every Q-α-compact set is P-α-closed.

(2) If a *fbs* (X, P, Q) is pairwise α-compact and pairwise α-Hausdorff, then (X, P, Q) has the α-property.

(3) If a *fbs* (X, P, Q) is pairwise α-Hausdorff and pairwise α-compact, then (X, P, Q) is pairwise α-regular.

(4) If a *fbs* (X, P, Q) is pairwise α-Hausdorff and pairwise α-compact, then (X, P, Q) is pairwise α-normal.

In section IV, we introduce the concept of pairwise α-connectivity in a *fbs* and characterize some properties of pairwise α-connected space. We obtain the following results.

(1) Countable unions of pairwise intersecting pairwise α-connected sets are pairwise α-connected.

(2) (X, P, Q) is pairwise α-connected iff there is not a nonempty proper subset A of X such that A is P-α-closed and $X-A$ is Q-α-closed respectively.

(3) Let A be pairwise α-connected. Then B is pairwise α-connected if $A \subset B \subset P-Cl_\alpha(A) \cap Q-Cl_\alpha(A)$.

(4) Any pairwise α-component C of a *fbs* (X, P, Q) satisfies the equation $C = P-Cl_\alpha(C) \cap Q-Cl_\alpha(C)$.

In the final section V, we obtain the theorm for product of pairwise α-Hausdorff, pairwise α-compact and pairwise α-connected *fbs*.

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