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ON FERMATEAN FUZZY α-SEPARATION AXIOMS

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Abstract: The basis for investigating topological spaces is established by the compactness, connectedness, and separation axioms, all have an impact on notions in analysis, geometry, and other fields. They are crucial to both theoretical and computational mathematics since they support the formation of an extensive understanding of the structure and behavior of functions. Compactness, connectedness, and separation axioms in Fermatean fuzzy topology improve the conceptual structure and allow for greater uncertain modeling. They are significant in areas like artificial intelligence, decision-making, and systems modeling since they offer fundamental concepts to analyze fuzzy structures. In this study we explore FF α-separation axioms, FF α-connectedness, and FF α-compactness in Fermatean fuzzy topological spaces.

Keywords and Phrases: Fermatean fuzzy set, Fermatean fuzzy topology, Fermatean fuzzy α-set, Fermatean fuzzy α- separation axioms, Fermatean fuzzy α-connectedness, and Fermatean fuzzy α-compactness.

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