ABSTRACT

M.Sc. Thesis

FUZZY NORMED SPACE OF OPERATORS AND İTS COMPLETENESS

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In this thesis, general structure of fuzzy normed linear spaces is examined and basic concepts of bounded and continuous operators defined on these spaces are studied. Firstly, fuzzy norm on finite-dimensional linear spaces is defined and by means of $\alpha$-cut set some properties of this norm are mentioned. In the second part, generalizing the definition of fuzzy norm given on finite-dimensional linear spaces the topological structure and boundedness of these spaces is investigated. In the third section, defining the norm of linear operators, it is shown that the boundedness and continuity of these operators are equivalent. Finally Fuzzy Bounded Linear Operators Space is shown to be a Hausdorff space and its completeness is proven.

**Key Words**: Fuzzy Number, Fuzzy Real Number, Fuzzy Norm, Fuzzy Normed Linear Spaces, Fuzzy Bounded Operators, Fuzzy Continuity Operators, Completeness

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