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İSTANBUL ANALYSIS SEMINARS

Hypercyclic algebras

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Abstract

Let X be a topological space and let T be a bounded operator on X. We say that T is hypercyclic if T admits a dense orbit, namely if there exists a vector $x \in X$, called a hypercyclic vector for T, such that $\{T^n x;\ n \geq 0\}$ is dense in X. We shall denote by $HC(T)$ the set of hypercyclic vectors for T. It is known that, provided $HC(T)$ is nonempty, then it has some nice topological and algebraic properties. For instance, $HC(T) \cup \{0\}$ always contains a dense subspace, and there are nice criteria for the existence of a closed infinite-dimensional subspace in it.

When moreover X is an algebra, it is natural to study whether $HC(T)$ contains a nontrivial algebra. In this talk, we will explain some recent (negative and positive) results on this problem.

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TÜRK MATEMATİK DERNEĞİ