İSTANBUL ANALYSIS SEMINARS

HYPERCYCLICITY AND WEIGHTED SHIFT OPERATORS

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Abstract: Linear dynamics, also known as hypercyclicity, examines the dynamics of linear operators on separable, infinite dimensional Banach spaces. Formally, an operator T on a Banach space X is *hypercyclic* if there exists a vector x in X for which its orbit

$$\mathrm{Orb}(T, x) = \{x, Tx, T^2x, T^3x, \dots\}$$

is dense in X. Any such vector x is called a hypercyclic vector for the operator T.

Over the years, the class of weighted shift operators has played an important role in hypercyclicity. They are often used when applying new results or as a testing ground for new ideas in hypercyclicity. In the present talk, we will discuss how weighted shift operators have contributed in the following three area of hypercyclicity: weak hypercyclicity, disjoint hypercyclicity, and common hypercyclic vectors.

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