Analysis Seminar

Linear dynamical properties of weighted backward shifts on spaces of real analytic functions.

By

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Abstract: In this joint work with late Pawel Domanski, we give certain conditions on several linear dynamical properties of the weighted backward shift operators

$$B_w: A(\Omega) \to A(\Omega),$$

with weight sequences $w = (w_n)n\in N$, acting on the spaces of real analytic functions $A(\Omega)$ on open subsets Ω of R containing zero. These are linear continuous operators on $A(\Omega)$ that send the unit function to the zero function, and the monomials x^n to $w_n x^{(n-1)}$ for all $n \in N$.

Two main difficulties that arise in this consideration are that the locally convex spaces $A(\Omega)$, equipped with their natural topology, are non-metrizable and have no Schauder basis. A useful tool for obtaining conditions on hypercyclicity and chaos in this case is the description of the point spectra and the eigenspaces of weighted backward shifts on $A(\Omega)$.

Date: Thursday, May 11, 2023
Time: 19:00 – 20:00, GMT+3
Place: Zoom
To request the event link, please send a message to goncha@fen.bilkent.edu.tr