Some descriptive set-theoretic results in linear dynamics

Etienne Matheron

Université d'Artois, Lens (France)

Abstract

In this talk, I will focus on the topological complexity of a few families of Hilbert space operators defined by natural dynamical properties. Let H be a complex, separable, infinite-dimensional Hilbert space, and let B be a closed ball with center 0 and radius $M > 1$ in the space of all bounded linear operators on H. Let B be endowed with the Strong* Operator Topology, which turns it into a Polish space. I will be concerned with the topological complexity of the following families of operators from B: topologically mixing operators, chaotic operators, U-frequently hypercyclic operators, distributionally chaotic operators, and operators admitting a non-trivial Gaussian ergodic measure.