

# SEMINARIO IMAC DE ANÁLISIS



## Mini-Curso a cargo de Alfred Peris *Universitat Politècnica de València*

### *Introduction to hypercyclicity and linear chaos.*

**ABSTRACT:** The aim of these talks is to give a brief introduction to the theory of hypercyclic operators and linear chaos, and to present some problems. Also, some results and questions on the chaotic dynamics of polynomials on (infinite-dimensional) Banach and Fréchet spaces will be given. The following is the tentative schedule and contents of the talks:

**Lecture 1:** Hypercyclic operators, Devaney chaos and wild polynomials Basic notions and examples of hypercyclic operators. Hypercyclicity criteria. Some necessary conditions. Chaos in the sense of Devaney. Homogeneous polynomials: Existence and non-existence of hypercyclicity. Chaotic non-homogeneous polynomials and Julia sets of one complex variable polynomials.

**Lecture 2:** Beyond hypercyclic operators  $C_0$ -semigroups and asymptotic behaviour of solutions to linear PDEs. Mixing properties. Frequently hypercyclic operators and ergodic theory. Li-Yorke and distributional chaos.

#### References

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**Fecha:** 30 de noviembre de 2011, a las 12:00 horas y 1 de diciembre a las 15:30 horas.

**Lugar:** Seminario TI-2328 del Departamento de Matemáticas ESTCE. Universitat Jaume I de Castelló.