XVII Encuentros Análisis Funcional Murcia-Valencia
Burjassot (Valencia)

Actualizado 24 de enero de 2020

24 de enero de 2020

10:00 - 10:15	–	Bienvenida
10:15 - 10:45	–	Zapata, José Miguel: *Large deviations built on max-stable monetary risk measures*
10:50 - 11:20	–	Kizgut, Ersin: *Averaging operators on an (LB)-sequence space*
11:20 - 11:50	–	Café
11:50 - 12:20	–	Castillo-Medina, Jaime: *Convergencia Regular de series de Dirichlet dobles*
12:25 - 12:55	–	Gómez-Orts, Esther: *Spectra of composition operators on Korenblum type spaces...*
13:00 - 13:30	–	Santacreu, Daniel: *Mean ergodic composition operators in spaces of homogeneous...*
13:30 - 15:30	–	Comida
15:30 - 16:00	–	Grelier, Guillaume: *Super-reflexive spaces and cotypes*
16:05 - 16:35	–	Roldán, Óscar: *Norm Attaining Operators which satisfy a Bollobás type theorem*
16:40 - 17:10	–	Bernardes, Nilson: *Hyperbolicity Versus Structural Stability in Linear Dynamics*
17:15 - 17:35	–	Jung, Mingu: *Bollobás theorem on Hilbert spaces*
17:40 - 18:10	–	Martinez-Cervantes, Gonzalo: *The Mardesic Conjecture and some open problems...*

Resúmenes

Large deviations built on max-stable monetary risk measures

Zapata, José Miguel

Universität Konstanz

Large deviations theory studies the asymptotic tail behavior of sequences of probability distributions by means of the Large Deviation Principle (LDP) and the Laplace Principle (LP). We provide a functional analytic foundation for large deviations built on the notion of max-stable monetary risk measure. We introduce the LDP for max-stable monetary risk measures and establish the Varadhan-Bryc equivalence between the LDP and the LP by showing that a max-stable monetary risk measure satisfies the LDP if and only if it has a representation in terms of the LP. We prove an analogue of Bryc's lemma for monetary risk measures that are locally max-stable on compact subsets by establishing two sufficient conditions for the LDP: one is an analogue of exponential tightness, and the other one covers the case when the rate function does not necessarily have compact sublevel sets. The main results are illustrated by the asymptotic shortfall risk of sequences of random variables.

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Averaging operators on an (LB)-sequence space

Kizgut, Ersin

Universitat Politècnica de València

In this talk we report on properties of the Cesàro averaging operators acting on an (LB)-space, specifically a Köthe co-echelon space of order 0 which satisfies certain axioms. We characterize continuity and compactness of the operator with respect to the structure of the space. We also describe the spectrum, which behaves substantially different in reference to nuclearity of the space. Finally we give some remarks on dynamical properties.

Convergencia Regular de series de Dirichlet dobles

Castillo-Medina, Jaime

Universidad de Valencia

En el problema de la convergencia de series de Dirichlet dobles es necesario introducir una nueva definción de convergencia, como la que dio Hardy para series dobles en 1917. Esta definición de convergencia, que Hardy llamó regular, fue adaptada por Kojima en 1920 en el primer estduio de la convergencia de series dobles. En esta charla revisamos el problema de convergencia de series de Dirichlet de una varaible compleja y nos basamos en el trabajo de Kojima para caracterizar los conjuntos de convergencia regular de series de Dirichlet dobles. Además daremos nuevas fórmulas para el caso ordinario doble que son aplicables en la práctica para obtener ejemplos no triviales de dichos conjuntos.

Spectra of composition operators on Korenblum type spaces of analytic functions

Gómez-Orts, Esther

Universitat Politècnica de València

We study the spectrum, point spectrum and other related properties of composition operators when they act on the classical Korenblum space $A^{-\infty}$ and other related spaces of analytic functions on the open unit disc.

Mean ergodic composition operators in spaces of homogeneous polynomials

Santacreu, Daniel

Universitat Politècnica de València

We study some dynamical properties of composition operators defined on the space $\mathcal{P}(^mX)$ of m-homogeneous polynomials on a Banach space X when $\mathcal{P}(^mX)$ is endowed with two different topologies: the one of uniform convergence on compact sets and the one defined by the usual norm. The situation is quite different for both topologies: while in the case of uniform convergence on compact sets every power bounded composition operator is uniformly mean ergodic, for the topology of the norm there is no relation between the latter properties. Several examples are given.

Joint work with David Jornet and Pablo Sevilla.

Super-reflexive spaces and cotypes

Grelier, Guillaume

Universidad de Murcia

Enflo's result shows that a super-reflexive space admits an equivalent uniformly convex norm. Pisier proved that this new norm may be chosen such that its modulus of convexity is bounded below by a power function. In particular, a super-reflexive space admits a non-trivial cotype. In this talk, we bring another point of view of these results

Norm Attaining Operators which satisfy a Bollobás type theorem

Roldán, Óscar

Universitat de València

We recall some of the classical definitions and results on the norm attaining theory and we introduce a recent concept regarding the density of norm attaining operators. To be more specific, we study what operators satisfy a specific Bollobás type result. To do that, we introduce the set $\mathcal{A}_{\|\cdot\|}(X, Y)$ of all norm one linear operators T from X into Y which attain the norm and satisfy the following: given $\varepsilon > 0$, there exists η, which depends on ε and T, such that if $\|T(x)\| > 1 - \eta$, then there is x_0 such that $\|x_0 - x\| < \varepsilon$ and T itself attains the norm at x_0. The analogous set $\mathcal{A}_{\mathrm{nu}}$ for numerical radius of an operator instead of its norm is also defined and studied. Several non trivial examples of operators from both sets will be given. This talk is based on a joint work with Sheldon Dantas and Mingu Jung.

Hyperbolicity Versus Structural Stability in Linear Dynamics

Bernardes, Nilson

Universidade Federal do Rio de Janeiro

A classical theorem in the area of dynamical systems asserts that every invertible hyperbolic operator on a Banach space is structurally stable. This result was originally obtained by Philip Hartman in 1960 for operators on finite-dimensional euclidean spaces. The general case was independently obtained by Jacob Palis and Charles Pugh around 1968. It is natural to ask: Does the converse of this theorem hold? It was soon realized that the answer is æsïn the finite-dimensional setting. Indeed, a 1972 paper by Joel W. Robbin already contains a proof of this fact. However, the full question remained open for more that 50 years. In our talk we will consider this problem and will present the recent solution obtained in a joint paper by Ali Messaoudi and the speaker.

Bollobás theorem on Hilbert spaces

Jung, Mingu

Pohang University of Science and Technology (Corea del Sur)

We consider the Bishop-Phelps-Bollobás point property for various classes of operators on complex Hilbert spaces, which is a stronger property than the Bishop-Phelps-Bollobás property. We also deal with analogous problem by replacing the norm of an operator with its numerical radius.

The Mardesic Conjecture and some open problems on Banach Space Theory

Martinez-Cervantes, Gonzalo

University of Murcia

This is a joint work with Grzegorz Plebanek. The classical Peano curve demonstrates that the unit interval, a metrizable compact line, may be continuously mapped onto its square. This cannot happen for compact lines that are not metrizable: Treybig and Ward proved that if a product of two infinite compact spaces is a continuous image of a compact line then such a product is necessarily metrizable.

In 1970 Mardesic conjectured that if a product of d compact lines can be mapped onto a product of $d + s$ infinite compact spaces $K_1, K_2, ..., K_{d+s}$ with $s \geq 1$, then there are at least $s + 1$ metrizable factors K_j. Using a new kind of dimension of compacta, combinatorial in nature, we are able to solve Mardesic's Conjecture.

Moreover, some open problems on Banach Space Theory where this concept of dimension might throw some light will be presented.

Pósters

- Ariza Ruiz, David: *An existence principle for variational inequalities in Banach spaces*

- Dantas, Sheldon: *Smooth norms in dense subspaces of Banach spaces*

- Galdames-Bravo, Orlando: *A factorization for multilinear Calderón-Zygmund operators*

- López Alfonso, Salvador: *On the Grothendieck property for algebras*

- López Pellicer, Manuel: *Weak sequential convergence in bounded finitely additive measures*

- López-Martínez, Antoni: *Frequently recurrent operators*

- Mora Jiménez , María: *Canonical rank prediction with the Greedy Rank-One Update Algorithm for a class of linear systems*

- Rodríguez Arenas, Alberto: *Ergodic properties of composition semigroups on the disc algebra*

- Rodríguez Ruiz, José: *On integration in Banach spaces and total sets*

- Rueda Segado, Pilar: *Factorable strongly p-nuclear m-homogeneous polynomials*