Workshop on Functional Analysis and Dynamical Systems (FADYS)

Universidade Federal de Santa Catarina Florianópolis, SC, Brazil

February 23-27, 2015

Conferência é apoiada em parte pelo projeto "Pesquisador Visitante Especial" do programa "Ciência sem Fronteiras" (Linha 1 - CAPES), processo 085/2012





The FADYS conference takes place in the hotel Praiatur located in the beach suburb Praia dos Ingleses in the north of the island of Santa Catarina.

Hotel address: Avenida Dom João Becker, 222, Praia dos Ingleses, Florianópolis, SC, Brasil. Ph.: (48) 3261.3232 / (48) 3261.3261

Emergency numbers:

police 190, ambulance 192, fire 193.





Dedicated to the 60th anniversary of Prof. Thierry Giordano.



Thierry is one of the finest Canadian mathematicians working in Operator Algebras and Dynamical Systems, and his research encompasses topological dynamics, ergodic theory, tiling theory, von Neumann algebras, C^* -algebras and random walk theory, as well as theory of infinite-dimensional groups of transformations. Lately, Thierry has also been active in the subjects of applied mathematics and quantum information theory.

Thierry has published papers in the very best journals such as Advances, Inventiones, JAMS, plus many top specialized journals (JFA, JOT). Thierry's ongoing collaboration with his coworkers Putnam and Skau (and Matui) is probably the most impressive - his most cited paper (the spectacular 142 citations according to MathSciNet, and counting!) is with the same group of coauthors.

Thierry's 1981 doctorate degree is from the Université de Neuchâtel, Switzerland, and after a number of fixed-term appointments in Switzerland and Canada, Thierry has settled in a tenure-track position at the University of Ottawa in 1991, where he is now a Full Professor of Mathematics (since 1999) and a Vice-Dean of Science.

Beyond his being a very successful researcher, Thierry is also a brilliant administrator. He has been dean and vice-dean of the faculty of science at uOttawa, and his devotion to serving the mathematical community through organization of conferences and various research programs is exemplary. In particular, the present close working relationship between the Operator Algebra Group at UFSC and Analysis Research Group at the University of Ottawa is largely due to Thierry's efforts.

Thierry is a regular visitor to Florianópolis, and his talks and mini-courses given here make it obvious why he is also considered an excellent teacher and is a winner of major teaching prizes: the presentation is always crystal clear and very inspiring.

In Floripa, Thierry is and will always be considered as one of us, a local.

Happy Birthday Thierry! - Bon Anniversaire ! - Feliz Aniversário!

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Horário das palestras

	segunda	terca	quarta	quinta	sexta	
	23 fev.	24 fev.	25 fev.	26 fev.	27 fev.	
9:00-9:50	Registration	Vadim	Rufus	Siegfried	Joachim	
		Kaimanovich	Willett	Echterhoff	Cuntz	
9:50-10:20	Christian	Eduardo	Christina	Gilles	Giuliano	
		Garibaldi	Brech	Castro	Boava	
10:20-10:50	JKau	Coffee				
10:50-11:20	Charles Starling	Misha Dokuchaev	Nilson da Costa Bernardes Jr	Alexandre Baraviera	Michael Schraudner	
11:20-11.50	Maria	Rodrigo	Brice	Rohit	Bergfinnur	
	Ramirez Solano	Bissacot	Mbombo	Holkar	Durhuus	
12:00-14:00	Lunch break			Lunch break		
14:00-14:50	Jordi López-Abad	Mikael Rordam		Claire Anantharaman Delaroche	Valentin Ferenczi	
14:50-15:20	Tristan Bice	Omar Selim	Free	Leandro Candido	Ruy Evol	
15:20-15:50	Coffee		Afternoon	Coffee		
15:50-16:20	Lamaga	Eduardo		Dana		
	James Mingo	Scarparo		Bartošová		
16:20-17:10	Miligo	Artur		Alejandro		
		Lopes		Maass]	
		1			1	
19:00-21:00	Conference			Conference		
	reception			dınner*		

* To be held at Ataliba restaurant, which offers the famous Brazilian barbecue rodizio. The cost is not included in the registration. Per person (without beverage, but including transportation) it will be around 90 reais = 30 US dollars.

Organizadores:

Alcides Buss (alcides.buss arroba ufsc ponto br), Daniel Gonçalves (daniel.goncalves arroba ufsc ponto br), Marcelo Sobottka (marcelo.sobottka arroba ufsc ponto br), Vladimir Pestov (vpest283 arroba uottawa ponto ca).

Necessary and sufficient conditions to be an eigenvalue for finite rank minimal Cantor systems

Alejandro Maass University of Chile amaass@dim.uchile.cl Coauthors: Fabien Durand, Alexander Frank

In this talk we provide necessary and sufficient conditions that a complex number must verify to be a measurable or a continuous eigenvalue of a topological finite rank minimal Cantor system. These conditions are constructed from the combinatorial information carried by the Bratteli-Vershik representations of such systems. Examples to illustrate the applicability of these conditions are developed for the case of Toeplitz subshifts and symbolic representations of irrational rotations of the interval.

Some properties of convolutions of invariant measures Alexandre Baraviera *IM-UFRGS*

baravi@mat.ufrgs.br Coauthors: Bruno Uggioni

Given a topological group G and two probability measures m_1 and m_2 defined on the borelian sets of G we can define another probability, denoted by $m_1 * m_2$, called the convolution of m_1 and m_2 . Now take a continuous map $T: G \to G$ that is compatible with the product, say, T(xy) = T(x)T(y). Considering two probability measures μ_1 and μ_2 that are invariant for T then it is possible to show that $\mu_1 * \mu_2$ is also T-invariant.

Lindenstrauss, Meiri and Peres considered the situation above when G is the group S^1 and T is the expansive map T(x) = dx, d an integer larger or equal than 2. They were able to show that under certain conditions, a sequence of invariant measures $\mu_1, \mu_2 * \mu_1, \mu_3 * \mu_2 * \mu_1, \ldots$ converges to the measure that maximizes entropy, the Lebesgue measure.

In this talk I will review this result and also discuss some possible extensions for other groups; this is a work in progress with Bruno Uggioni.

Interactions, specifications, DLR probabilities and phase transitions via the use of the Ruelle operator in the one-dimensional lattice

Artur Lopes *UFRGS* arturoscar.lopes@gmail.com Coauthors: Leandro Cioletti

We consider general continuous potentials on the symbolic space (the one-dimensional lattice \mathbb{N} with a finite number of spins). We show a natural way to associate potentials of Thermodynamic Formalism with Interactions. Using properties of the Ruelle operator we show the relation of the Gibbs Measures of Hölder potentials considered in Thermodynamic Formalism with the Dobrushin-Lanford-Ruelle Gibbs measures and also with Gibbs measures obtained via the Thermodynamic Limit with boundary conditions.

We present a kind of "dictionary" so one of our purposes is to clarify for both the Dynamical Systems and Mathematical Statistical Mechanics communities how these distinct concepts of Gibbs measures are related.

We also exhibit examples where phase transition occurs in these different settings.

Random walks on random graphs

Bergfinnur Durhuus University of Copenhagen durhuus@math.ku.dk

We review various recent results on properties of random walks on certain classes of random graphs motivated by considering discretized versions of quantum gravity in low dimensions. In particular, the concepts of Hausdorff and spectral dimensions of random graphs will be introduced and results concerning their values for random trees and random planar surfaces will be discussed.

The group of linear isometries of the Gurarij space is extremely amenable

Brice Rodrigue Mbombo Universidade de São Paulo, Brazil bricero@yahoo.fr Coauthors: Dana Bartošová and Jordi López-Abad

Using the Graham-Rothschild Theorem on partitions of finite sets, we prove an approximate Ramsey property for almost isometric embeddings between finite dimensional spaces. As corollary we obtain the result mentioned in the title.

Boundary quotients of semigroup C*-algebras Charles Starling University of Ottawa cstar050@uottawa.ca

The construction due to Li of a C^* -algebra associated to a left-cancellative semigroup P generalizes many interesting classes of C^* -algebras. These algebras are akin to Toeplitz algebras, and in this analogy their boundary quotients play the role of the Cuntz algebras. Li's recent work on these algebras focuses on the case where P embeds in a group. The class of semigroups which embed into groups is a large and rich class, though it does not include a great many interesting examples – for instance semigroups obtained from self-similar groups. In this talk we discuss the boundary quotients of the C^* -algebras of such P by using a canonical embedding into an inverse semigroup, and find algebraic conditions on Pwhich guarantee that the boundary quotient is simple and purely infinite.

The GPS theory of minimal Cantor systems

Christian Skau Norwegian University of Science & Technology (NTNU) csk@math.ntnu.no

We will give an overview of the theory initiated by Giordano, Putnam and Skau (GPS) more than 20 years ago of studying minimal Cantor systems by introducing (ordered) K-theory. The impetus came from non-commutative theory, specifically C^* -crossed products. A crucial tool in obtaining the results is the notion of an (ordered) Bratteli diagram.

Continuous images of compacta and isometric embeddings of Banach spaces Christina Brech IME-USP, University of São Paulo brech@ime.usp.br Coauthors: Piotr Koszmider

Given a compact space K, let C(K) be Banach space of real-valued functions defined on K. We consider the relation between the existence of a continuous function from some compact K onto another compact L and the existence of an isometric embedding of C(L) into C(K). Getting an isometric embedding from a continuous onto function is trivial, while the converse is not true in general. We discuss some classical results implying that the converse holds for some particular compacta L and we present an example where the converse fails.

Discrete group actions preserving a proper metric. Amenability and property (T)

Claire Anantharaman-Delaroche Université d'Orléans, France claire.anantharaman@univ-orleans.fr

Answering a question of von Neumann, dating back to 1929, it was shown in the 80's, by van Douwen, that there exist amenable (in von Neumann's sense) "non trivial" actions of free groups. The class of groups admitting such actions has been studied in the last ten years by several authors. In this talk, I will focus on the case of "non trivial" actions by isometries on locally finite metric spaces. I will mainly study examples of non amenable groups with such amenable actions by isometries and study some properties of these actions. I shall also give a brief overview of the corresponding questions relative to Kazhdan property (T).

Ramsey theory and the group of homeomorphisms of the Lelek fan

Dana Bartošová Universidade de São Paulo dana@ime.usp.br Coauthors: Aleksandra Kwiatkowska; Jordi Lopez-Abad, and Brice Mbombo

In a series of papers with Kwiatkowska, we studied the Lelek fan from a model theoretic point of view and the dynamics of its homeomorphism group. In order to compute the universal minimal flow of the group, we isolated a Ramsey property that we managed to prove with Lopez-Abad and Mbombo in our work about the group of linear isometries of the Gurarij space. Aubry set for asymptotically sub-additive potentials Eduardo Garibaldi UNICAMP garibaldi@ime.unicamp.br

Given a topological dynamical systems (X, T), consider a sequence of continuous potentials $\mathcal{F} := \{f_n : X \to \mathbb{R}\}_{n \ge 1}$ that is asymptotically approached by sub-additive families. In a generalized version of ergodic optimization theory, one is interested in describing the set $\mathcal{M}_{\max}(\mathcal{F})$ of *T*-invariant probabilities that attain the following maximum value

$$\max\left\{\lim_{n\to\infty}\frac{1}{n}\int f_n\,d\mu\,:\,\mu\text{ is }T\text{-invariant probability}\right\}.$$

For this purpose, we extend the notion of Aubry set, denoted by $\Omega(\mathcal{F})$. Our main result provide a sufficient condition for the Aubry set to be a maximizing set, i. e., μ belongs to $\mathcal{M}_{\max}(\mathcal{F})$ if, and only if, its support lies on $\Omega(\mathcal{F})$. Furthermore, we apply this result to the study of the generalized spectral radius in order to show the existence of periodic matrix configurations approaching this value. This is a joint work with J. T. A. Gomes.

Supramenability of a group and tracial states on partial crossed products

Eduardo Scarparo University of Copenhagen duduscarparo@gmail.com Coauthors: Matias Lolk Andersen

A group is supramenable if all of its subsets are non-paradoxical. We discuss the relation between supramenability of a group and existence of tracial states on partial crossed products associated to partial actions of the group on unital C^* -algebras. In the commutative case, our discussion corresponds to the question of existence of invariant measures for partial actions on compact Hausdorff spaces.

The tight spectrum of an inverse semigroup associated to a labelled space $C^{(1)} = C^{(1)}$

Gilles Castro *UFSC* gillescastro@gmail.com Coauthors: Giuliano Boava, Fernando Mortari

We review the notion of the tight spectrum of an inverse semigroup and some of its characterizations, as well as some definitions related to labelled spaces. Then we define an inverse semigroup associated to a labelled space and give a description of its tight spectrum.

The diagonal C*-subalgebra of the C*-algebra associated to a labelled space Giuliano Boava UFSC gboava@gmail.com Coauthors: Gilles Gonçalves de Castro, Fernando de Lacerda Mortari

In this talk, we propose a slight modification of a relation in the C^* -algebra associated to a labelled space. With this new relation, we show that the spectrum of the diagonal C^* -subalgebra of the C^* -algebra associated to a labelled space is homeomorphic to the tight spectrum of its associated inverse semigroup.

Freeness and Graph Sums James Mingo *Queen's University* mingo@mast.queensu.ca

In random matrix theory one usually need to know if certain families of random matrices are asymptotically free so that one can apply the tools of free probability theory. When the entries are Gaussian then explicit formulas are possible using the symmetric group. In applications however one usually doesn't know the distributions of the entries of the matrix in question. I will describe the technique of graph sums and apply it to the case of some partially transposed matrices.

 $C^*\mbox{-algebras}$ arising from irreversible algebraic systems Joachim Cuntz $Universit \ddot{a}t\ M \ddot{u}nster$ cuntz@math.uni-muenster.de

We give a survey of work over the past years, on systems arising from algebraic number theory or ergodic theory.

Approximate Ramsey properties of finite dimensional normed spaces

Jordi Lopez-Abad ICMAT (Madrid) and IME, USP (Sao Paulo) jlopezabad@gmail.com Coauthors: D. Bartosova and B. Mbombo; V. Ferenczi, B. Mbombo and S. Todorcevic

We will present our recent works of new Ramsey properties of a large class of finite dimensional normed spaces, including the ℓ_p^n s with $1 \le p \le \infty$. As a consequence, we obtain that the group of isometries of the Gurarij space is extremely amenable, and we provide new proofs of the fact that the isometry groups of the Lebesgue spaces $L_p[0,1]$ $(1 \le p < \infty)$ are extremely amenable. The proof for the case $p = \infty$ uses the dual Ramsey theorem, while our proofs for the case p = 2 and $p \ne 2, \infty$ use a concentration of measure argument for approximate equi-partitions.

On the concept of n-diversity and the Banach spaces C(Kⁿ)
Leandro Candido
University of São Paulo, Department of Mathematics, IME, Rua do Matão 1010, São Paulo, Brazil
lc@ime.usp.br
Coauthors: Piotr Koszmider

Given a compact Hausdorff space K we consider the Banach space of real continuous functions $C(K^n)$ or equivalently the *n*-fold injective tensor product $\widehat{\bigotimes}_{\varepsilon} C(K)$ or the Banach space of vector valued continuous functions

$$C(K, C(K, C(K, ..., C(K))))$$
.

We introduce the concept of *n*-diversity and address the question of the existence of complemented copies of $c_0(\omega_1)$ in spaces $C(K^n)$ under the hypothesis that C(K) contains an isomorphic copy of $c_0(\omega_1)$.

The main result is that under the assumption of the combinatorial principle known as the Ostaszewski's \clubsuit , for every $n \in \mathbb{N}$ there is a compact Hausdorff space K_n of weight ω_1 such that $C(K_n)$ is Lindelöf in the weak topology, $C(K_n)$ contains a copy of $c_0(\omega_1)$, $C(K_n^n)$ does not contain a complemented copy of $c_0(\omega_1)$ while $C(K_n^{n+1})$ does contain a complemented copy of $c_0(\omega_1)$. This is related to results of a paper of E. M. Galego and J. Hagler (2012) and results of a paper of A. Dow, H. Junnila and J.Pelant (2009).

A computational approach to the Thompson group F

Maria Ramirez-Solano Universidade Federal de Santa Catarina (UFSC), Florianópolis. maria.r.solano@gmail.com

It is a long standing open problem whether the Thompson group F is amenable. In this talk I will give a brief introduction to the three Thompson groups F, T and V and their C^* -algebras and von Neumann algebras. Then I will discuss the paper "A computational approach to the Thompson group F", which I wrote in collaboration with Uffe Haagerup and Søren Haagerup. Here we estimate the norms of certain elements of the reduced C^* -algebra of F, that suggest that F might not be amenable.

Strongly aperiodic subshifts of finite type on the (discrete) Heisenberg group

Michael Schraudner *CMM* - Universidad de Chile mschraudner@dim.uchile.cl Coauthors: Ayse Sahin and Ilie Ugarcovici

We will discuss aperiodicity of subshifts of finite type (SFT) on different groups and will then show a first construction of a strongly aperiodic SFT on the non-abelian discrete Heisenberg group. This is joint work with Ayse Sahin and Ilie Ugarcovici from DePaul University, Chicago.

Purely infinite actions of groups on spaces Mikael Rordam University of Copenhagen rordam@math.ku.dk

It is well-known that a discrete group is amenable if and only if each action of the group on a compact Hausdorff space admits an invariant probability measure. An action of a group G on a totally disconnected space is said to be purely infinite if each compact-open subset is G-paradoxical. No such action can admit an invariant probability measure, nor a non-zero invariant Radon measure (in the non compact case). It was shown by Sierakowski and me that each non-amenable group admits a purely infinite (minimal and free) action on the Cantor set, and by Kellerhals, Monod and me that a discrete group admits a purely infinite (minimal and free) action on the locally compact non-compact Cantor set if and only if the group is non-supramenable.

I will explain these and related results, and talk about properties of actions of a group on its betacompactification and on its open invariant subsets.

Partial Galois cohomology, Picard semigroups and the relative Brauer group Mikhailo Dokuchaev Instituto de Matemática e Estatística da Universidade de São Paulo dokucha@gmail.com

Coauthors: Antonio Paques, Hector Pinedo

In [1] S. U. Chase, D.K. Harrison and A. Rosenberg developed a Galois Theory of commutative rings, and gave a seven terms exact sequence, establishing thus a common generalization of the two most fundamental facts from Galois cohomology of fields: the Hilbert's Theorem 90 and the isomorphism of the Brauer Group with the second cohomology group of the Galois group. Since then much attention has been paid to the sequence and its parts subject to more constructive proofs, generalizations and analogues in various contexts. In particular, in [3], given a continuous action of a locally compact group G on a locally compact space X, the concept of the equivariant Picard group was introduced, and, using the notion of the equivariant Brauer group from [2], an analogue of the Chase-Harrison-Rosenberg exact sequence was given for the ring C(X) of complex-valued continuous functions on X.

Partial actions and partial representations were introduced in the theory of operator algebras (see, in particular, [8] and [9]) as crucial ingredients of a new approach in the study of C^* -algebras generated by partial isometries, stimulating abstract algebraic developments. In particular, in [4] a result on globalization of partial group actions on unital rings was obtained which permitted to develop the Galois Theory of partial actions in [6]. On the other hand, the concepts of twisted partial actions and the corresponding crossed product, introduced for C^* -algebras in [8], and adapted for abstract rings in [5], suggested the idea of a cohomology theory based on partial actions, which was developed in [7].

Using the concept of partial group cohomology and introducing Picard semigroups we constructed, in collaboration with A. Paques and H. Pinedo, a version of the seven terms exact sequence for a partial Galois extension of commutative rings. Some details of this work will be presented in our talk.

[1] S. U. Chase, D. K. Harrison, A. Rosenberg, Galois Theory and Galois homology of commutative rings, Mem. Amer. Math. Soc. 58 (1965), 15 – 33.

[2] D. Crocker, A. Kumjian, I. Raeburn, D. P. Williams, An equivariant Brauer group and actions of groups on C^{*}-algebras, J. Funct. Anal. **146** (1997), 151 – 184.

[3] D. Crocker, I. Raeburn, D. P. Williams, Equivariant Brauer and Picard groups and a Chase-Harrison-Rosenberg exact sequence, J. Algebra, **307**, No. 1, (2007), 397 – 408.

[4] M. Dokuchaev, R. Exel, Associativity of crossed products by partial actions, enveloping actions and partial representations, *Trans. Am. Math. Soc.*, **357** (2005), 1931–1952.

[5] M. Dokuchaev, R. Exel, J. J. Simón, Crossed products by twisted partial actions and graded algebras, J. Algebra, **320** (2008), (8), 3278–3310.

[6] M. Dokuchaev, M. Ferrero, A. Paques, Partial Actions and Galois Theory, J. Pure Appl. Algebra, 208 (2007), (1), 77–87.

[7] M. Dokuchaev, M. Khrypchenko, Partial cohomology of groups, J. Algebra, 427 (2015), 142–182.

[8] R. Exel, Twisted partial actions: a classification of regular C^* -algebraic bundles, Proc. London Math. Soc., **74** (1997), (3), 417–443.

[9] R. Exel, Partial actions of groups and actions of inverse semigroups, Proc. Am. Math. Soc. 126 (1998), (12), 3481–3494.

Li-Yorke chaos for linear operators

Nilson C. Bernardes Jr. Universidade Federal do Rio de Janeiro bernardes@im.ufrj.br Coauthors: A. Bonilla, V. Müller, A. Peris

We study the notions of Li-Yorke chaos, dense Li-Yorke chaos and generic Li-Yorke chaos for continuous linear operators on arbitrary infinite-dimensional separable Fréchet spaces. We establish several characterizations of these notions, including a Li-Yorke Chaos Criterion and a Dense Li-Yorke Chaos Criterion. For instance, we prove that dense Li-Yorke chaos is equivalent to the existence of a dense (or residual) set of irregular vectors and that generic Li-Yorke chaos is equivalent to the whole space being a scrambled set. We also offer conditions under which an operator admits a dense linear manifold of irregular vectors. Our general results are applied to some fundamental classes of operators, including weighted backward shifts on Fréchet sequence spaces and composition operators on spaces of holomorphic functions.

This is a joint work with A. Bonilla, V. Müller and A. Peris.

Some calculations concerning Talagrand's submeasure

Omar Selim University of Sao Paulo oselim.mth@gmail.com

We will present a preliminary attempt to explicitly calculate the values that Talagrand's example of an exhaustive pathological submeasure assumes on the Cantor algebra.

A large deviation principle for Gibbs states on countable Markov shifts at zero temperature Rodrigo Bissacot IME-USP, University of São Paulo

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Coauthors: Edgardo Pérez (IME-USP), Jairo K. Mengue (UFRGS)

Let be $\Sigma_{\mathbf{A}}(N)$ a topologically mixing countable Markov shift with the BIP property over the alphabet N and a Walters potential $f : \Sigma_{\mathbf{A}}(N) \to \mathbb{R}$ with finite pressure. Under suitable hypothesis we prove the existence of a large deviation principle for the family of Gibbs states $(\mu_{\beta})_{\beta>1}$ where each μ_{β} is the Gibbs measure associated to the potential βf . As a corollary, we obtain a new proof for the same principle in the case of topologically mixing subshifts over a finite alphabet, previously proved by A. Baraviera, A. Lopes and P. Thieullen.

Topological correspondences for groupoids Rohit Dilip Holkar *UFSC* rohit_ar1@yahoo.co.in

We define the notion of topological correspondence, for locally compact groupoid with Haar system. A topological correspondence from a groupoid (G, α) to another one (H, β) , induces a C^* -correspondence from $C^*(G, \alpha)$ to $C^*(H, \beta)$. We state applications of topological correspondences in representation theory of groupoids and in KK-theory.

Dynamic asymptotic dimension

Rufus Willett University of Hawaii at Manoa rufus@math.hawaii.edu Coauthors: Erik Guentner, Guoliang Yu

I'll introduce a dynamical notion of dimension for an action of a discrete group on a compact space, and sketch out some connections with metric geometry and the orbit breaking technique that was used in work of Giordano-Putnam-Skau (and many other places). I'll also discuss some applications to nuclear dimension and K-theoretic computations (the latter is our main motivation).

This is joint work with Erik Guentner and Guoliang Yu.

Generalized correspondences

Ruy Exel Universidade Federal de Santa Catarina ruyexel@gmail.com

The generalization mentioned in the title addresses the asymmetry in the usual notion of correspondences, where one considers a right inner product but no left counterpart. I plan to discuss a concrete example where this generalized notion becomes relevant, as well as to vaguely discuss the difficulties in defining tensor products of generalized correspondences and the apparent need to introduce the notion of "blends".

Exotic crossed products and K-theory Siegfried Echterhoff University of Münster echters@uni-muenster.de Coauthors: Alcides Buss and Rufus Willett

In this lecture we report on joint work with Alcides Buss and Rufus Willett about functorial properties of exotic crossed-product functors with applications to the computation of K-theory groups of certain exotic group algebras and crossed products by K-amenable groups. Hereditary C*-subalgebra lattices Tristan Bice Federal University of Bahia Tristan.Bice@gmail.com Coauthors: Charles A. Akemann

 C^* -algebras A are often likened to topological spaces, with hereditary C^* -subalgebras H(A) taking the place of open subsets. But while open subset lattices have been studied extensively, leading to the point-free topology of frames and locales, our understanding of H(A) is still very limited. To rectify this we examine various connections between algebra in A and order in H(A).

Measures with the same boundary Vadim Kaimanovich University of Ottawa vkaimano@uottawa.ca Coauthors: Behrang Forghani

I will describe a new construction (based on randomized Markov stopping times) of measures with the same Poisson boundary on the same group.

On maximality of bounded groups on Banach spaces and on the Hilbert space

Valentin Ferenczi Universidade de São Paulo ferenczi@ime.usp.br Coauthors: Christian Rosendal

We shall discuss transitivity, almost transitivity and maximality of bounded groups of isomorphisms on separable Banach spaces, with special attention to the case of the Hilbert space. These questions may be related to Mazur's rotations problem as well as to Dixmier's unitarizability problem. Joint work with Christian Rosendal.