Conference Booklet

International Conference on C*-algebras and Non-commutative Geometry

——In honor of Guihua Gong's 60th birthday

2022.12.19 – 2022.12.23
Dalian University of Technology
Dalian, China

International Conference on C*-algebras and Non-commutative Geometry

——In honor of Guihua Gong's 60th birthday

Time：December 19--23, 2022

Institute：School of Mathematical Science, Dalian University of Technology

Scientific Advisory Board:

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Online Meeting Room：

For Dec.19-Dec. 23,　　8:00--12:00

Zoom Meeting ID：　822 6220 0069，Passcode：202212

For Dec.19-Dec. 23,　　14:00--17:30

Tencent Meeting ID：521-8995-3393，Passcode：202212

"C*-代数与非交换几何"国际会议

时间：2022 年 12 月 19 日--23 日

举办单位：大连理工大学数学科学学院

学术委员会：

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会议平台：

12.19--12.23 上午

　Zoom：822 6220 0069

　密码： 202212

12.19--12.23 下午

　腾讯会议：521-8995-3393

　会议密码：202212

Calendar	Note: The time beneath the speaker's name represents the speaker's local time				
Beijing time	**Monday 12.19**	**Tuesday 12.20**	**Wednesday 12.21**	**Thursday 12.22**	**Friday 12.23**
Morning Sessions					
8:30--9:15	**George Elliott** (12.18 Sun. 19:30--20:15)	**Guoliang Yu** (12.19 Mon. 18:30--19:15)	**Dechao Zheng** (12.20 Tue. 19:30--20:15)	**Feng Xu** (12.21 Wed. 19:30--20:15)	**Qin Wang**
9:20--10:05	**Cornel Pasnicu** (12.18 Sun. 19:20--20:05)	**Huaxin Lin** (12.19 Mon. 17:20--18:05)	**Kunyu Guo**	**Xiang Tang** (12.21 Wed. 19:20--20:05)	**Zhizhang Xie** (12.22 Thur. 19:20--20:05)
10:15--11:00	**Youqing Ji**	**Sherry Gong** **Chunlan Jiang** **Special Event**	**Kai Wang**	**Yijun Yao**	**Jinmin Wang** (12.22 Thur. 20:15--21:00)
11:05--11:50	**Zhuang Niu** (12.18 Sun. 19:05--19:50)		**Hang Wang**	**Kun Wang** (12.21 Wed. 21:05--21:50)	**Qingnan An**
Afternoon Sessions					
14:00--14:45	**Junsheng Fang**		**Bingzhe Hou**	**Shengzhao Hou**	**Zhiqiang Li**
14:55--15:40	**Kui Ji**	**Free Afternoon**	**Chunguang Li**	**Shuyun Wei**	**Zhichao Liu**
15:50--16:35	**Yuanhang Zhang**		**Hongzhi Liu**	**Bo Cui**	**Rui Shi**

Date：**12.19 Monday**			
Morning Session Zoom ID：822 6220 0069， Passcode：202212			
Opening Ceremony			8:00 -- 8:30
Speaker：	**George Elliott**	**Chair：Chunlan Jiang**	8:30 -- 9:15
Title：	*On the classification of simple C*-algebras*		
Speaker：	**Cornel Pasnicu**		9:20 -- 10:05
Title：	*The weak ideal property, fixed point algebras and crossed products*		
	Break		
Speaker：	**Youqing Ji**	**Chair：Qin Wang**	10:15 -- 11:00
Title：	*The Power Set of Quasinilpotent Operators*		
Speaker：	**Zhuang Niu**		11:05 -- 11:50
Title：	*On Villadsen Algebras*		
Afternoon Session Tencent Meeting ID：521 8995 3393， Passcode：202212			
Speaker：	**Junsheng Fang**	**Chair：Zhiqiang Li**	14:00 -- 14:45
Title：	*Sums of projections in semifinite factors*		
Speaker：	**Kui Ji**		14:55 -- 15:40
Title：	*The Cowen-Douglas Theory for Operator Tuples and Similarity*		
	Break		
Speaker：	**Yuanhang Zhang**		15:50 -- 16:35
Title：	*Around the closure of the set of commutators of idempotents in B(H)：biquasitriangularity and factorisation*		

Date：**12.20 Tuesday**			
Morning Session Zoom ID：822 6220 0069， Passcode：202212			
Speaker：	**Guoliang Yu**	**Chair：Xiaoman Chen**	8:30 -- 9:15
Title：	*K-theory of maximal Roe algebras and their applications*		
Speaker：	**Huaxin Lin**		9:20 -- 10:05
Title：	*Professor Guihua Gong's work*		
	Break		
Speaker：	**Sherry Gong**		10:15 → ∞
Title：	*TBA*		
Speaker：	**Chunlan Jiang**		
Title：	*TBA*		
	Special Event		
Free Afternoon			

Date：**12.21　Wednesday**			
Morning Session　Zoom ID：822 6220 0069，　Passcode：202212			
Speaker：	**Dechao Zheng**	**Chair：Yufeng Lu**	8:30 -- 9:15
Title：	*Trace formula of semicommutators*		
Speaker：	**Kunyu Guo**		9:20 -- 10:05
Title：	*The Beurling--Wintner problem and analytic number theory*		
	Break		
Speaker：	**Kai Wang**	**Chair：Kui Ji**	10:15 -- 11:00
Title：	*Law of Large Numbers in Determinantal Point Processes*		
Speaker：	**Hang Wang**		11:05 -- 11:50
Title：	离散群的拓扑 K-理论和 Riemann-Roch 定理		
Afternoon Session　Tencent Meeting ID：521 8995 3393，　Passcode：202212			
Speaker：	**Bingzhe Hou**	**Chair：Shuyun Wei**	14:00 -- 14:45
Title：	*Classification, norm and spectrum of the representation of analytic functions*		
Speaker：	**Chunguang Li**		14:55 -- 15:40
Title：	*Stable rank of $C(X) \rtimes Z^d$*		
	Break		
Speaker：	**Hongzhi Liu**		15:50 -- 16:35
Title：	带边 PL 流形的的相对指标与相对 L 理论		

Date：**12.22 Thursday**				
Morning Session Zoom ID：822 6220 0069，Passcode：202212				
Speaker：	**Feng Xu**		**Chair：Junsheng Fang**	8:30 -- 9:15
Title：	*Entropy in QFT*			
Speaker：	**Xiang Tang**			9:20 -- 10:05
Title：	*Smooth Connes-Thom isomorphism, cyclic homology, and equivariant quantisation*			
	Break			
Speaker：	**Yijun Yao**		**Chair：Kai Wang**	10:15 -- 11:00
Title：	*TBA*			
Speaker：	**Kun Wang**			11:05 -- 11:50
Title：	*About Cuntz semigroup and Cuntz comparison for C*-algebras*			
Afternoon Session Tencent Meeting ID：521 8995 3393，Passcode：202212				
Speaker：	**Shengzhao Hou**		**Chair：Rui Shi**	14:00 -- 14:45
Title：	*Fock projection on weighted L^p spaces*			
Speaker：	**Shuyun Wei**			14:55 -- 15:40
Title：	*Complex Symmetry of Operators on Fock-Sobolev Spaces*			
	Break			
Speaker：	**Bo Cui**			15:50 -- 16:35
Title：	矩阵的特征值对其数值域的影响			

Date：**12.23**　　**Friday**			
Morning Session　Zoom ID：822 6220 0069，　Passcode：202212			
Speaker：	**Qin Wang**	**Chair :** **Youqing** **Ji**	8:30 -- 9:15
Title：	*On K-theory of the maximal Roe algebras*		
Speaker：	**Zhizhang Xie**		9:20 -- 10:05
Title：	*On Gromov's dihedral extremality/rigidity conjecture and the Stoker conjecture*		
	Break		
Speaker：	**Jinmin Wang**	**Chair :** **Zhichao** **Liu**	10:15 -- 11:00
Title：	*Lipschitz control of K-theory and decay of scalar curvature*		
Speaker：	**Qingnan An**		11:05 --11:50
Title：	*A total Cuntz semigroup for C*-algebras of stable rank one*		
Afternoon Session　Tencent Meeting ID：521 8995 3393，　Passcode：202212			
Speaker：	**Zhiqiang Li**	**Chair :** **Hang** **Wang**	14:00 -- 14:45
Title：	*Dynamical invariants for partially hyperbolic diffeomorphisms*		
Speaker：	**Zhichao Liu**		14:55 -- 15:40
Title：	*On the classification of certain C*-algebras of real rank zero*		
	Break		
Speaker：	**Rui Shi**		15:50 -- 16:35
Title：	*On approximate representation of AH algebras into semifinite von Neumann algebras*		

Abstract

(list in alphabetic order)

🔵 **Qingnan An (Northeast Normal University)**

Title: *A total Cuntz semigroup for C*-algebras of stable rank one*

Abstract: For unital, separable C*-algebras of stable rank one and real rank zero, the unitary Cuntz semigroup functor and the functor K_* are naturallly equivalent. Then we introduce a refinement of the unitary Cuntz semigroup, say the total Cuntz semigroup, which is a new invariant for separable C*-algebras of stable rank one, is a well-defined continuous functor from the category of C*-algebras of stable rank one to the category <u>Cu</u>. We prove that this new functor and the functor <u>K</u> are naturallly equivalent for unital, separable, K-pure C*-algebras. Therefore, the total Cuntz semigroup is a complete invariant for a large class of C*-algebras of real rank zero.

🔵 **Bo Cui (Hebei Normal University)**

Title: 矩阵的特征值对其数值域的影响

Abstract: 在所有具有相同特征值的范数为 1 的矩阵中，我们确定了具有最大数值域的那些矩阵，并探讨这些矩阵的一系列临界行为。

🔵 **George Elliott (University of Toronto)**

Title: *On the classification of simple C*-algebras*

Abstract: While well-behaved (i.e., Jiang-Su stable) simple separable amenable C*-algebras (assuming the UCT, which may be automatic) have now been classified---in large part owing to the work of Gong---, the non-well-behaved case is still an immense challenge. Tantalizing preliminary results have been obtained.

🔵 **Junsheng Fang (Hebei Normal University)**

Title: *Sums of projections in semifinite factors*

Abstract: Which positive operators in a factor von Neumann algebra can be written as sums of projections? This question is studied by Victor Kaftal, Ping Wong Ng, and Shuang Zhang. They obtained beautiful results on the question. In this talk we report some new progress on the question. This is joint work with Xinyan Cao and Zhaolin Yao.

● **Sherry Gong (Texas A&M University)**

Title: *TBA*

● **Kunyu Guo (Fudan University)**

Title: *The Beurling--Wintner problem and analytic number theory*

Abstract: This talk concerns a long-standing problem on completeness of function systems generated by odd periodic extensions of functions in $L^2(0,1)$. This problem, raised by Beurling and Wintner in the 1940s, is closely related to the Riemann Hypothesis. We completely solve the rational version of step functions (that is, those functions with rational jump discontinuities) by approaches from analytic number theory, and present several deep applications including a complete solution to the rational version of Kolzov completeness problem. This is a joint work with Dr. Hui Dan.

● **Bingzhe Hou (Jilin University)**

Title: *Classification, norm and spectrum of the representation of analytic functions*

Abstract: In this talk, we introduce the growth types of weighted Hardy spaces, which are inspired by M. Gromov's work in geometry group theory. We give the Jordan representation theorem for the analytic functions on the unit closed disk as multiplication operators on a weighted Hardy space of polynomial growth. In particular, on a weighted Hardy space of polynomial growth, the multiplication operator M_z is similar to M_φ for any analytic automorphism φ on the unit open disk; and for any Blaschke product B of

order m, M_B is similar to $\oplus_1^m M_z$, which is an affirmative answer to a generalized version of a question proposed by R. Douglas in 2007. By the way, we also give a counterexample to show that M_z could be not similar to M_φ induced by an analytic automorphism φ on a weighted Hardy space of intermediate growth, which indicates the necessity of the setting of polynomial growth condition. Moreover, we use this method to estimate the norms of composition operators induced by disc automorphisms, and then discuss the spectrum of those composition operators.

● **Shengzhao Hou (Soochow University)**

Title: *Fock projection on weighted L^p spaces*

Abstract: Projections are essential building blocks of operator theory on spaces of analytic functions. One cornerstone is to characterize their boundedness and compactness. In this talk, we will discuss the boundedness and compactness of Fock projection from $L^p(C^n, dv_\alpha)$ to $L^p(C^n, dv_\beta)$, where dv_α and dv_β are the Gaussian probability measures on C^n. Some applications on Berezin transform and generalized Fock projection are also discussed.

● **Kui Ji (Hebei Normal University)**

Title: *The Cowen-Douglas Theory for Operator Tuples and Similarity*

Abstract: We are concerned with the similarity problem for Cowen-Douglas operator tuples. The unitary equivalence counterpart was already investigated in the 1970's and geometric concepts including vector bundles and curvature appeared in the description. As the Cowen-Douglas conjecture show, the study of the similarity problem has not been so successful until quite recently. The latest results reveal the close correlation between complex geometry, the corona problem, and the similarity problem for single Cowen-Douglas operators. Without making use of the corona theorems that no longer hold in the multi-variable setting, we prove that the single operator results for similarity remain true for commuting Cowen-Douglas operator tuples as well. This talk is based on a recent joint work with Shanshan Ji, Hyun-Kyoung Kwon and Jing Xu.

● **Youqing Ji (Jilin University)**

Title: *The Power Set of Quasinilpotent Operators*

Abstract: Given a quasinilpotent bounded linear operator T on a complex Hilbert space H, we write $k_x = \limsup_{z \to 0} (\ln|(z-T)^{-1}x|)/\ln|(z-T)^{-1}|$ for each nonzero vector x. Set $\Lambda(T) = \{k_x : x \neq 0\}$, and call it the power set of T . It is closely related with the invariant subspaces of quasinilpotent operators. In this talk, we give a summary of the results about power set.

● **Chunlan Jiang (Hebei Normal University)**

Title: TBA

● **Chunguang Li (Northeast Normal University)**

Title: *Stable rank of $C(X) \rtimes Z^d$*

Abstract: I will introduce the definitions of stable ranks (Bass stable rank and topological stable rank). Then I will talk about some work on the stable rank of C^*-algebras. Consider a free and minimal action of Z^d on a compact Hausdorff space X. The main result shows that the stable rank of the corresponding crossed product C^*-algebra $C(X) \rtimes Z^d$ is 1. This gives a positive answer to a conjecture of Niu and Phillips. This talk is based on a joint work with Zhuang Niu.

● **Zhiqiang Li (Chongqing University)**

Title: *Dynamical invariants for partially hyperbolic diffeomorphisms*

Abstract: In this talk, I will report some work on dynamical invariants for C^1-smooth partially hyperbolic systems, mainly about the so-called unstable pressures in both topological and measure theoretic settings, the corresponding variational principles will be established. This is based on some joint work with W. Zhang and Y. Zhou.

● **Huaxin Lin (University of Oregon)**

Title: *Professor Guihua Gong's work*

● **Hongzhi Liu (Shanghai University of Finance and Economics)**

Title: 带边 PL 流形的的相对指标与相对 L 理论

Abstract: 我们通过几何的方式构造了相对手术群，并将相对 L 群放入一个手术群正合列。进而我们通过考虑相对 Roe 代数 K 理论，构造了相对 L 群到 K 理论的群同态。

● **Zhichao Liu (Dalian University of Technology)**

Title: *On the classification of certain C*-algebras of real rank zero*

Abstract: In this talk, I will report the recent progress on the classification of C*-algebras of real rank zero. This talk is based on joint work with Qingnan An and Yuanhang Zhang.

● **Zhuang Niu (University of Wyoming)**

Title: *On Villadsen Algebras*

Abstract: Villadsen algebras are simple unital AH algebras with diagonal maps such that the strict order on the Cuntz semigroup is not determined by the traces (hence not Jiang-Su absorbing). In the talk, I will report some recent work, joint with George Elliott and Chunguang Li, on the structure of Villadsen algebras. In particular, with a given contractible seeds space, the Villadsen algebra is shown to be classified by the K_0-group together with the radius of comparison.

● **Cornel Pasnicu (University of Texas at San Antonio)**

Title: *The weak ideal property, fixed point algebras and crossed products*

Abstract: We prove a number of results for C*-algebras with the weak ideal property or topological dimension zero, and some results for C*-algebras with related properties. Some of the more important results include:

- The weak ideal property implies topological dimension zero.
- For a separable C∗-algebra A, topological dimension zero is equivalent to $RR(\mathcal{O}_2 \otimes A)=0$, to $D \otimes A$ having the ideal property for some (or any)Kirchberg algebra D, and to A being residually hereditarily in the class of all C∗-algebras B such that $\mathcal{O}_\infty \otimes B$ contains a nonzero projection.
- Extending the known result for $\mathbb{Z}_2$, the classes of C*-algebras with residual (SP), which are residually hereditarily (properly) infinite, or which are purely infinite and have the ideal property, are closed under crossed products by arbitrary actions of abelian 2-groups.
- If A and B are separable, one of them is exact, A has the ideal property, and B has the weak ideal property, then $A \otimes_{\min} B$ has the weak ideal property.
- If X is a totally disconnected locally compact Hausdorff space and A is a $C_0(X)$-algebra all of whose fibers have one of the weak ideal property, topological dimension zero, residual (SP), or the combination of pure infiniteness and the ideal property, then A also has the corresponding property (for topological dimension zero, provided A is separable).
- Topological dimension zero, the weak ideal property, and the ideal property are all equivalent for a substantial class of separable C*-algebras including all separable locally AH algebras.
- The weak ideal property does not imply the ideal property for separable $\mathcal{Z}$-stable C*-algebras.

We give other related results, as well as counterexamples to several other statements one might hope for. We prove, for many properties (P) of C∗-algebras, the following theorem: Let A be a separable C*-algebra, let G be a second countable compact abelian group, and let $\alpha\colon G \to \mathrm{Aut}(A)$ be an action of G on A. Then A^α has (P)$\Leftrightarrow$ C∗(G,A,α) has (P).

Let α be an action of a finite group G on a C*-algebra A and assume that A has a composition series consisting of α-invariant ideals in which every quotient of successive ideals is α-simple (this happens, e.g., if A has finitely many α invariant ideals). We prove that in this case, C*(G,A,α) has the weak ideal property $\Leftrightarrow A^\alpha$ has the weak ideal property $\Leftrightarrow$ A has the weak ideal property.

This talk is mainly based on joint work with N. Christopher Phillips and on some recent results.

● Rui Shi (Dalian University of Technology)

Title: *On approximately equivalent representation of AH algebras into semifinite von Neumann algebras*

Abstract: In this talk, we will discuss a non-commutative version of Weyl-von Neumann theorem for approximately equivalent representations of AH algebras into semifinite von Neumann algebras.

● Xiang Tang (Washington University in St. Louis)

Title: *Smooth Connes-Thom isomorphism, cyclic homology, and equivariant quantisation*

Abstract: In this talk, we will discuss a cyclic homology version of the Connes-Thom isomorphism. As an application, we explain that periodic cyclic homology is invariant with respect to equivariant strict deformation quantisations. This talk is based on joint work with Sayan Chakraborty and Yijun Yao.

● Hang Wang (East China Normal University)

Title: 离散群的拓扑 K-理论和 Riemann-Roch 定理

Abstract: 离散群的 K-理论是 Baum-Connes 猜测中通过高指标映射来近似约化群 C*-代数 K-理论的拓扑不变量，与经典指标理论紧密相关。例如，它的构造所运用的 K-理论的推出映射自然的蕴含了椭圆算子的解析指标。通过研究离散群 K-理论的陈特征及其与循环上圈的配对我们得到 Baum-Connes 猜测左侧的高指标公式，其中，陈特征构造过程蕴涵了一个等变 Grothendieck-Riemann-Roch 公式。这是我与 Paulo Carrillo-Rouse 和 Bai-Ling Wang 的合作.

● Jinmin Wang (Texas A&M University)

Title: *Lipschitz control of K-theory and decay of scalar curvature*

Abstract: In this talk, I will present a theorem on the control of K-theory of C*-algebras with Lipschitz filtrations. The main result, or example, is that every element in the topological K-theory of finite simplicial complex admits a Lipschitz representative with a controlled Lipschitz constant. Our approach is to develop a quantitative K-theory for Lipschitz filtrations. I will also talk about its application that the positive scalar curvature on uniformly contractible spaces with finite asymptotic dimension decays at a specific rate. This is joint work with Zhizhang Xie and Guoliang Yu.

🔵 **Kai Wang (Fudan University)**

Title: *Law of Large Numbers in Determinantal Point Processes*

Abstract: In the talk we will show a weak law of large numbers for the determinantal point processes from zeros of Gaussian analytic functions on the unit disc. This is a joint work with prof. Yanqi Qiu.

🔵 **Kun Wang (Texas A&M University)**

Title: *About Cuntz semigroup and Cuntz comparison for C*-algebras*

Abstract: Examples due to Villadsen, Rørdam, and Toms have shown that Elliott invariant is insufficient for the classification of all simple, separable, and nuclear C*-algebras. There are simple, separable, and nuclear C*-algebras that can be distinguished by their Cuntz semigroups but not by their Elliott invariant.

In this talk, I will introduce the definition and some properties of the Cuntz semigroup. Brown, Perera, and Toms recovered the Cuntz semigroup for a well behaved class of simple C*-algebras by using the ingredients of the Elliott invariant—the Murray-von Neumann semigroup and the cone of lower semicontinuous traces.

In this talk, we give a characterization of the Cuntz comparison for a class of C*-algebras with one non-trivial closed two-sided ideal, by using the Murray-von Neumann semigroup and the cone of lower semicontinuous traces. This is a joint work with G. Elliott.

● Qin Wang (East China Normal University)

Title: *On K-theory of the maximal Roe algebras*

Abstract: The maximal Roe algebra was introduced in 2006 by Guihua Gong, Guoliang Yu and myself in our work on geometrization of the strong Novikov conjecture. This notion has stimulated a lot of fascinating progress on the coarse Baum-Connes conjecture and related problems in recent fifteen years. Recently, we show that if a metric space X admits an "A-by-CE coarse fibration" structure, then the canonical quotient map from the maximal Roe algebra to the reduced Roe algebra of X induces an isomorphism on K-theory. A typical example of such a space arises from a sequence of finite group extensions such that the sequence of normal subgroups has Yu's property A, and the sequence of quotient groups admits a coarse embedding into Hilbert space. This implies that the maximal coarse Baum-Connes conjecture holds for a large class of metric spaces, e.g. relative expanders, which may not admit a fibred coarse embedding into Hilbert space. This is joint work with Liang Guo, Zheng Luo, and Yazhou Zhang.

● Shuyun Wei (Soochow University)

Title: *Complex Symmetry of Operators on Fock-Sobolev Spaces*

Abstract: An operator $T \in B(H)$ is complex symmetric if there exists a conjugation C on H such that $CTC = T^*$. In this talk, we mainly discuss when a weighted composition operator $W_{\varphi,\psi}$ or a Toeplitz operator T_φ on the Fock-Sobolev space $F^{2,m}$, is complex symmetric with respect to certain conjugation C_λ.

● Zhizhang Xie (Texas A&M University)

Title: *On Gromov's dihedral extremality/rigidity conjecture and the Stoker conjecture*

Abstract: I will talk my joint work with Jinmin Wang and Guoliang Yu on our positive solutions to Gromov's dihedral extremality conjecture and dihedral rigidity conjecture. These conjectures concern comparisons of

scalar curvature, mean curvature and dihedral angles for compact manifolds with corners (more generally for manifolds with polyhedral type boundary), which have many interesting applications in geometry and mathematical physics. A key ingredient of our approach is a new index theory for manifolds with polyhedral boundary. This index theoretic approach was later further developed by Jinmin Wang and myself to solve Gromov's flat corner domination conjecture, which led to a positive solution to the Stoker conjecture. If time permits, I will sketch some of the key ideas that go into the proofs of these results.

● **Feng Xu (University of California，Riverside)**

Title: *Entropy in QFT*

Abstract: We will present some results about entropy in Quantum Field Theory (QFT)

● **Yijun Yao (Fudan University)**

Title: TBA

● **Guoliang Yu (Texas A&M University)**

Title: *K-theory of maximal Roe algebras and their applications*

Abstract: I will first recall the concept of maximal Roe algebras introduced in my joint work with Guihua and Qin and then discuss our joint work on the maximal coarse Baum-Connes conjecture. I will also explore some recent applications of maximal Roe algebras. This talk will be accessible to students and non-specialists.

● **Yuanhang Zhang (Jilin University)**

Title: *Around the closure of the set of commutators of idempotents in $\mathcal{B(H)}$: biquasitriangularity and factorisation*

Abstract: In this talk, we study the norm-closure of the set C_E of bounded

linear operators acting on a complex, separable Hilbert space $\mathcal{H}$ which may be expressed as the commutator of two idempotent operators.

In particular, we will identify which biquasitriangular operators belong to the norm-closure $\mathrm{clos}(C_E)$ of C_E, and we exhibit an index obstruction to membership in $\mathrm{clos}(C_E)$. If time permitted, we will also give some results about the factorisations of bounded linear operators on $\mathcal{H}$ as sums and products of elements in C_E and related sets.

This is a joint work with Laurent Marcoux and Heydar Radjavi.

● Dechao Zheng (Vanderbilt University)

Title: *Trace formula of semicommutators*

Abstract: In my talk, I will discuss trace formulas of semicommutators of Toeplitz operators with $\mathcal{C}^2(\overline{\mathbb{D}})$ symbols on weighted Bergman spaces on the unit disk and generalize this formula to weighted Bergman spaces on the unit ball in higher dimensions. This is a joint work with Xiang Tang and Yi Wang.

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