报 告 日 程

5月30号：格物楼315

时间	报告	主持人
08:25-08:30 开幕式		
08:30-09:20	报告人：王勤 题　目：Regularity Under Inversion for Convolution Operators on Strongly Subexponential Groups	马昕
09:25-10:15	报告人：纪奎 题　目：Flags, Cocycle Derivations, and the Chain Rule for Operator Tuples	
10:15-10:45	茶歇（合影）	
10:50-11:40	报告人：安庆楠 题　目：Total K-theory and Elliott Conjecture of Real Rank Zero	马昕
午 休		
14:00-14:50	报告人：梁兵兵 题　目：Mean weak length	尹晟
14:55-15:45	报告人：江永乐 题　目：II_1 factors with prescribed number of exotic invariant subalgebras	
15:45-16:05	茶歇	
16:05-16:55	报告人：刘智超 题　目：Classification of certain C*-algebras of real rank zero	尹晟
17:00-17:50	报告人：张建国 题　目：Quantitative K-theory and the coarse Baum-Connes conjecture	
晚　餐		

5月31号：格物楼315

时间	报告	主持人
09:00-09:50	报告人：吴健超 题　目：Almost elementary groupoids and classifiable C*-algebras	TBD
09:55-10:45	报告人：章嘉雯 题　目：Quasi-local algebras and their projections	TBD
10:45-11:05	茶歇	
11:05-11:55	报告人：李春光 题　目：Remarks on Villadsen algebras	TBD

报告题目与摘要

Regularity Under Inversion for Convolution Operators on Strongly Subexponential Groups

王勤　华东师范大学

摘要：We study spectral invariance and regularity for convolution operators on locally compact groups with strong subexponential growth. We prove a spectral comparison theorem, showing that compactly supported functions have identical spectra in weighted function algebras, pseudofunction algebras, and group operator algebras, meaning these algebras are quasi-symmetric. For unimodular groups, we introduce a smooth function space as a Gevrey–Schwartz type algebra. A quantitative non-commutative Wiener lemma is established: if a convolution operator from this smooth space is invertible in the unitized pseudofunction algebra, its inverse remains in the Gevrey regularity class. This is joint work with Lin Chen.

Flags, Cocycle Derivations, and the Chain Rule for Operator Tuples

纪奎　河北师范大学

摘要：In this report, we analyze the intrinsic flag structure for operators tuples, formulating the condition in terms of the associated holomorphic Hermitian vector bundle. We prove that the \mathcal{F}B_n operator class represents the exact subclass of Carlson--Clark extensions where the abstract module derivation reduces to a geometric chain rule. The rank-2 theory, based on a single extension cocycle, is developed in detail and then extended to the rank-r setting, where we prove that the level-wise strong intertwining condition automatically forces a "crossed intertwining" between consecutive cocycles---the operator-theoretic expression of the commutativity of mixed partial derivatives.

Total K-theory and Elliott Conjecture of Real Rank Zero

安庆楠　东北师范大学

摘要: We will discuss some recent progress on the classification for C*-algebras (Elliott Conjectur) of real rank zero. Examples will be given to show the following: (1) There exists a real rank zero inductive limit of 1-NCCW complexes which is not an AD algebra, when K_1 is torsion-free or has bounded torsion; (2) Total K-theory is not a complete invariant for 1-ASH algebras of real rank zero. This serry of works are jointed with Søren Eilers, Guihua Gong and Zhichao Liu.

Mean weak length

梁兵兵　苏州大学

摘要：We introduce a weak version of the classical length function, called the weak length function, defined on subsets of R-modules over a unital ring R. We further study the mean weak length for RΓ-modules associated with an amenable group Γ. Under an appropriate upgrading condition together with certain mild assumptions, we establish that the mean weak length function is additive with respect toshort exact sequences. This result has two consequences. First, it provides a purely algebraic proof of the additivity of algebraic entropy, which is a property originally established via topological entropy methods. Second, within this unified framework,we give an alternative and conceptual proof of the additivity of mean length, previously obtained by Li－Liang and Virili using different approaches. This is a joint work with Zihan Bai.

II_1 factors with prescribed number of exotic invariant subalgebras

江永乐　大连理工大学

摘要：For any given integer n ≥ 1, we construct i.c.c. groups G such that the II_1 factor L(G) have exactly n-many conjugate G-invariant von Neumann subalgebras not arising from subgroups. This may be thought of as an analogous result of Krogager-Vaes,who proved that for ery positive integer n, there exists a class of II_1 factors M that admit exactly n group measure space artan subalgebras up to conjugacy by an automorphism of M. Based on joint work with Qinxuan Xu.

Classification of certain C*-algebras of real rank zero

刘智超 大连理工大学

摘要: In this talk, we focus on real rank zero C*-algebras that can be realized as inductive limits of Elliott-Thomsen building blocks. We begin by introducing the necessary notation and reviewing some known results. We then establish several key properties of the connecting homomorphisms. Finally, we conclude with a partial classification theorem for these algebras.

Quantitative K-theory and the coarse Baum-Connes conjecture

张建国 陕西师范大学

摘要: Quantitative K-theory, introduced by G. Yu, is a refinement of K-theory for operator algebras. In this talk, we employ quantitative K-theory to formulate a refined version of the coarse Baum-Connes conjecture and prove that it can be derived by the coarse Baum-Connes conjecture with coefficients.

Almost elementary groupoids and classifiable C*-algebras

吴健超 复旦大学

摘要: This talk is based on collaborations with Xin Ma, where we introduce and study a notion of almost elementary étale groupoids (possibly non-ample), which unifies the notions of almost finiteness and pure infiniteness, and implies strict comparison of the groupoid. Our main motivations lie in the connections to the theory of C*-algebras. Most importantly, we show that an almost elementary minimal étale groupoid gives rise to a tracially Z-stable C*-algebra. On the other hand, we verify that many classifiable C*-algebras (including all of the strongly self-absorbing ones) have almost elementary étale groupoid models. We also make progress toward the conjecture that the Jiang-Su algebra Z does not arise from a crossed product associated to a topological action.

Quasi-local algebras and their projections

章嘉雯　复旦大学

摘要：Quasi-local algebras are operator algebras associated with metric spaces, which encode their coarse geometry. They were introduced by John Roe and played an important role in the study of higher index theory, since their K-theories serve as receptacles for higher indices of pseudo-differential elliptic operators on open manifolds. Compared to the classical Roe algebras, the structures of quasi-local algebras are more complicated and it is a long-standing question whether their K-theories are the same. In this talk, we introduce state-of-the-art results concerning the relation between their structures, and our recent progress on the projections in these algebras. This is joint work with Jingming Zhu.

Remarks on Villadsen algebras

李春光　东北师范大学

摘要：Villadsen algebras of the first type were constructed in 1998 as examples of simple unital C*-algebras which have perforation in their ordered K_0 group. This class of C*-algebras lies outsidethe scope of the current classification theorem, as Villadsen algebras do not absorb the Jiang-Su algebra Z tensorially. We shall show that such algebras can be classified by the K_0 group together with the radius of comparison. Also, we shall show that such algebras are singly generated. These works are joint with Elliott, Niu and Ruzicka.