ETIENNE BLANCHARD
Institut de Math de Jussieu

Proper infiniteness and K_1 injectivity (joint work with R. Rohde and M. Rordam)

We investigate if a unital $C(X)$-algebra is properly infinite when all its fibres are properly infinite. We show that this question can be rephrased in several different ways, including the question if every unital properly infinite C*- algebra is K_1-injective.

FLORIN BOCA
University of Illinois at Urbana-Champaign

Continued Fractions and Operator Algebras

An AF algebra is naturally associated with the continued fraction algorithm. The Stern-Brocot numbers naturally arise as ranks of the buiding blocks. The Effros-Shen algebras are obtained as primitive quotients. We plan to discuss some of the properties of this algebra (structure of ideals, traces, dimension group, path algebra description).

NATE BROWN
Pennsylvania State University

Metric space associated with tracial C-algebras*

I'll describe a natural construction of metric spaces that can be associated to many tracial C*-algebras. Theses spaces are defined via certain homomorphisms and have some interesting properties, as I'll explain.

MARIUS DADARLAT
Purdue University

The homotopy groups of the automorphism group of Kirchberg algebras

The homotopy groups of the automorphism group of a Kirchberg algebra are computed in terms of KK-theory groups.

SIEGFRIED ECHTERHOFF
Westflische Wilhelms-Universitt

K-theoretic fibrations (based on joint work with Herve Oyono-Oyono and Ryszard Nest)

We study non-commutative analogues of Serre-fibrations in topology. We shall present several examples of such fibrations and give applications for the compution of the K-theory of certain C*-algebras.

SOREN EILERS
University of Copenhagen

Semiprojectivity of non-commutative CW-complexes

Several years ago, Loring, Pedersen and I proved semiprojectivity for a class of C*-algebras arising as mapping tori for maps between finite-dimensional C*-algebras. We did this to address a class of matrix approximation problems in the spirit of Lin and Friis-Rrdam, and consequently did not publicize the semiprojectivity result much in itself.

In recent years, the classification community has been working intensely with the class of subhomogeneous C*-algebras, overlapping nontrivially with the class considered in our work, and I have noted a couple of instances were our result could have been used to simplify certain arguments. Thus I intend to try to promote our old result and give an overview of its rather complicated proof.

GUIHUA GONG
University of Puerto Rico

Geometrization of Strong Novikov conjecture for residually finite groups

In this talk, I will present the following results: Strong Novikov Conjecture for a residually finite group is essentially equivalent to the Coarse Geometric Novikov Conjecture for a certain metric space associated to the group. This is a joint work with Q. Wang and G. Yu.

ILAN HIRSHBERG
Ben Gurion University

Finite group actions on the Jiang-Su algebra

I will discuss some recent joint work with W. Winter, concerning the structure of the crossed product of the Jiang-Su algebra by a permutation action.

MASAKI IZUMI
Kyoto University

Classification Z^2 actions on the Kirchberg algebras

I'll report on our recent classification result of a certain class of Z^2 actions on the Kirchberg algebras by the Kasparov group KK 1(A,A). This is a joint work with H. Matui.

CHUNLAN JIANG
Hebei Normal University

A Complete Classification of AI algebras And AC Structure of AH algebras with ideal property

Let A be an AI algebra (or AH algebra), that is, A is a C^*-algebra inductive limit C^*-algebra of

$$A_1 \xrightarrow{\phi_{1,2}} A_2 \xrightarrow{\phi_{2,3}} A_3 \longrightarrow \cdots \longrightarrow A_n \longrightarrow \cdots$$

where $A_n = \bigoplus_{i=1}^{k_n} M_{[n,i]}(C(X_n^i))$(or $A_n = \bigoplus_{i=1}^{k_n} P_{n_i} M_{[n,i]}(C(X_n^i))P_{n_i})$, X_n^i are $[0,1]$(or X_n^i are compact metric spaces), k_n and $[n,i]$ are positive integers and $P_{n_i} \in M_{[n,i]}(C(X_n^i))$ are projections. Suppose that A has the ideal property: each closed two-sided ideal of A is generated by the projection inside the ideal, as closed two-sided ideals.

In 1991, George Elliott classified the simple unital approximate interval algebras using an invariant consisting K_0 theory and tracial state data.

In 1995, Kenneth H.Stevens proved a generalization of this result by permitting the algebra are unital . Furthermore, the algebra is also assumed to be approximately divisible.

In the first part of the talk, we generalize the Stevens's result to classify all the AI algebras with the ideal property – that is, both of the above restrictions (of being unital and approximately divisible) will be removed.

Let $A = lim(A_n = \bigoplus_{i=1}^{k_n} P_{n_i} M_{[n,i]}(C(X_n^i))P_{n_i}, \phi_{n,m})$ be an AH algebra with the ideal property. Suppose that $\sup \dim_{n_i}(X_{n_i}) < +\infty$ (This condition can be relaxed to a certain condition called very slow dimension growth).

In the second part of the talk, we show that if we further assume that $K_*(A)$ is torsion free, then A is an approximate circle algebra (or an AC algebra), that is A can be written as the inductive limit of

$$B_1 \longrightarrow B_2 \longrightarrow B_3 \longrightarrow \cdots \longrightarrow B_n \longrightarrow \cdots$$

where $B_n = \bigoplus_{i=1}^{s_n} M_{[n,i]}(C(S_1))$.

TAKESHI KATSURA
University of Toronto

Generic automorphisms of approximately divisible AF algebras satisfy the Rohlin property

In 1997, Evans and Kishimoto proved that automorphisms of AF algebras with the Rohlin property are classified up to outer conjugacy by the automorphisms on the K_0-groups they induce. In this talk, the following results are presented:

(i) Automorphisms on K_0-groups of AF algebras induced by automorphisms with the Rohlin property are completely determined. (ii) Automorphisms of an AF algebra inducing such automorphisms on its K_0-group generically have the Rohlin property. (In other words, in the set of automorphisms of an AF algebra inducing a given automorphism on its K_0-group, the set of automorphisms with the Rohlin property is, if it is not empty, a dense G_δ-subset.) (iii) An AF algebra has the property that all automorphisms on its K_0-group are induced by automorphisms with the Rohlin property if and only if it is approximately divisible.

Several other equivalent conditions for AF algebras to be approximately divisible are also disscussed. This is joint work with N. C. Phillips.

EBERHARD KIRCHBERG
Humboldt-University

Strong "UCT" classes of non-simple C-algebras*

Strongly purely infinite separable stable nuclear B is in the "strong UCT class" if B contains a "regular" Abelian C*-subalgebra A such that the injection of A in B defines – as an element of KK(X; A,B) – a KK(X; . , .)-equivalence of A and B, where X:=Prim(B). Here A is regular if A separates the ideals of B and the intersection of ideals of B with A is compatible with sums of (two) ideals. If such A exists, it is not uniquely determined, but it has the property that A and the action of Prim(B) on A determine B up to isomorphisms, i.e. there is a canonical reconstruction of B from (A,X). The generalization of the proofs for simple classification to the non-simple case is related to the (non-trivial) fact that the tensor product of B with O_2 has always the strong UCT property. It says that a T_0 space X is the primitive ideal space of a separable nuclear C*-algebra B, if and only if,

(i) the topology of X is second countable, (ii) every prime closed subset of X is the closure of a point, (iii) there exists a locally compact space Y and a continuous map P from Y into X that is pseudo-open and pseudo-epimorphic.

The canonical (re-)construction of B with Prim(B) isomorphic to X from P shows: For every second countable locally compact group G and every continuous action of G on X there is a continuous action of G on the tensor product B_0 of B with O_2 that induces the given action on X. In particular, the natural group morphism from the automorphisms of B_0 to the homeomorphisms of X is a topological group epimorphism that has a sort of local splitting property. The latter applies e.g. to interesting examples recently found by Chris Phillips.

ALEX KUMJIAN
University of Nevada

k-morphs

A k-morph may be thought of as a bridge between two k-graphs; it functions as the analog of a C*-correspondence in a sense which we make precise in a functorial way. It is the minimum structure needed to synthesize a (k+l)-graph from two given k-graphs.

This is joint work with David Pask and Aidan Sims of the University of Wollongong.

DAVID KERR
Texas A and M University

Dynamics and perforation

I will explain how the perforative phenomena shown to occur among simple amenable C*-algebras by Villadsen and Toms can be realized within a dynamical framework. More specifically, I will show how to construct a minimal homeomorphism for which the K_0 group of the crossed product fails to be weakly unperforated, and a minimal homeomorphism for which the crossed product has the same Elliott invariant as an AT-algebra but has Cuntz semigroup which fails to be almost unperforated. This is joint work with Julien Giol.

NADIA LARSEN
University of Oslo

Hecke C-algebras of semidirect products and KMS-states*

We discuss a C*-dynamical system arising from the ring inclusion of the 2x2 integer matrices in the rational ones. The underlying C*-algebra is the reduced C*-algebra of a semidirect product Hecke pair associated to the inclusion, and is closely related to the $GL_2 - system$ of Connes and Marcolli. We describe a general procedure for obtaining induced representations of Hecke C*-algebras of semidirect products, and for the particular system we obtain a family of faithful representations. We establish a tensor product

decomposition of the fixed-point algebra under a natural group of symmetries, and use this and the family of representations to describe a phase transition for a natural class of KMS-states. (Joint work with M. Laca and S. Neshveyev.)

HUAXIN LIN
University of Oregon

Applications of the Elliott program

tba

HIROKI MATUI
Chiba University

$Z^2 - actions$ on UHF algebras

Classification of group actions is one of the most fundamental subjects in the theory of operator algebras. In this talk, I will discuss classification of $Z^2 - actions$ on UHF algebras up to cocycle conjugacy. The Rohlin property of $Z^2 - actions$ plays a crucial role. This is joint work with T. Katsura.

RALF MEYER
Universitt Gttingen

Computing Kirchberg's bivariant K-theory

The classification of non-simple C*-algebras uses a variant of Kasparov's bivariant K-theory due to Kirchberg that takes into account the ideal structure of the C*-algebras as well. I will present a general machine to obtain a universal coefficient spectral sequence in this context that involves the filtrated K-theory. In many - perhaps even in all - examples, this spectral sequence degenerates to an exact sequences.

NARUTAKA OZAWA
University of California, Los Angeles

Weak amenability of hyperbolic groups

In the late 70s, Haagerup proved that the distance function on a tree is conditionally negative definite, or equivalently that the kernels r^d have Schur multiplier norm one for all 0¡r¡1. General hyperbolic graphs need not have this property, but it turns out that the kernels r^d have uniformly bounded Schur multiplier norm for 0¡r¡1.

CORNEL PASNICU
University of Puerto Rico

Purely infinite C-algebras of real rank zero*

We show that a separable purely infinite C^*-algebra is of real rank zero if and only if its primitive ideal space has a basis consisting of compact-open sets and the natural map $K_0(I) \to K_0(I/J)$ is surjective for all closed two-sided ideals $J \subset I$ in the C^*-algebra. It follows in particular that if A is any separable C^*-algebra, then $A \otimes \mathcal{O}_2$ is of real rank zero if and only if the primitive ideal space of A has a basis of compact-open sets, which again happens if and only if $A \otimes \mathcal{O}_2$ has the ideal property. This is joint work with Mikael Rørdam (to appear in J. Reine Angew. Math.).

FRANCESC PERERA
Universitat Autonoma de Barcelona

Representing abstract semigroups as semigroups of projections of C-algebras*

It is a priori a difficult problem to find, given an abelian semigroup M (with, say, some presentation in terms of generators and relations), a C*-algebra A whose semigroup of Murray von Neumann equivalence classes of projections $V(A)$ is isomorphic to M. In this talk I will discuss conditions on M that allow such a representation result to hold, in the form of a graph C*-algebra. This is joint work with Pere Ara (Barcelona) and Friedrich Wehrung (Caen).

CHRISTOPHER PHILLIPS
University of Oregon

Towards Z-stability of direct limits of recursive subhomogeneous C-algebras*

We report on current work aimed at proving that, under suitable conditions, simple direct limits of recursive subhomogeneous C*-algebras are stable under tensoring with the Jiang-Su algebra Z. The exact contents of the talk will depend on what has been achieved by the time of the conference. This is joint work with Marius Dadarlat and Andrew Toms.

MIKAEL RORDAM
University of Southern Denmark

The Jiang-Su algebra revisited

tba

KLAUS THOMSEN
Aarhus University

On the homoclinic and heteroclinic C-algebras of expansive dynamical systems*

Methods and results from the classification program of C*-algebras can be used to clarify the structure of the C*-algebras which were associated to certain expansive dynamical systems by D. Ruelle and I. Putnam. I will illustrate this by considering expansive group automorphisms and/or the generalized one-dimensional solenoids introduced by R. F. Willimas and I. Yi.

ANDREW TOMS
York University

Topological vs. Matricial dimension in C-algebras*

Simple C*-algebras of high topological dimension were discovered by Villadsen in the mid 1990s, and have provided typically negative answers to many open problems. They have been little studied in their own right, however. In this talk I will discuss some invariants which are well-adapted to studying these algebras, and which may be thought of as recording the ratio of the algebra's topological dimension to its "matricial size". As an application we obtain the analogue among separable amenable C*-algebras of McDuff's construction of an uncountable family of mutually non-isomorphic II_1 factors.

SIMON WASSERMANN
University of Glasgow

MASAs, tensor products and the extension property

If A and B are C*-algebras with maximal abelian self-adjoint C*-subalgebras (MASAs) C and D, respectively, it is a corollary of a known slice-map result for C*-algebras that the closure $C \otimes D$ of the algebraic tensor product $C \odot D$ in the minimal C*-tensor product $A \otimes_{min} B$ is again a MASA. If $\| \ \|_{max} \neq \| \ \|_{min}$ on $A \odot B$, the situation for the closure of $C \odot D$ in $A \otimes_{max} B$ or any other non-minimal C*-completion $A \otimes_\alpha B$ of $A \odot B$ is less clear. When C has the extension property and B is unital, we show that that $C \otimes D$ is a MASA in $A \otimes_\alpha B$ for any C*-norm α. This result has interesting connections with some long-standing open questions.

WILHELM WINTER
University of Nottingham

'Localizing the Elliott conjecture

Many of the known manifestations of the Elliott conjecture may be interpreted as classification up to D-stability, where D is a fixed strongly self-absorbing C*-algebra, such as the Cuntz algebra O_∞, O_2 or the Jiang-Su algebra Z. We formalize this point of view by introducing the concept of 'localizing the Elliott conjecture at a strongly self-absorbing C*-algebra D'. We explain how existing classification results fit into this framework.

Our main theorem is a new classification result up to Z-stability: Let A be the class of separable, unital, simple C*-algebras with locally finite decomposition rank, such that projections separate traces, and satsifying the UCT as well as a mild K-theory condition. Using results of H. Lin, we show that A satisfies the Elliott conjecture localized at Z.

This in particular confirms the Elliott conjecture for separable, unital, simple, monotracial and Z-stable ASH algebras with finitely generated K-theory, a class known to contain the UHF algebras, the irrational rotation algebras and the (projectionless) Jiang-Su algebra itself.

Our result does not depend on an inductive limit structure in any way; in the monotracial case it does not depend on the existence or nonexistence of projections.

Our proof also reveals a strategy of how to possibly remove the trace space condition entirely.