WABASH
EXTRAMURAL MODERN ANALYSIS
SEMINAR

February 23

2:00 p.m.
at
Wabash College
in rooms 114 and 118 Baxter Hall

Times given are Eastern Daylight Time,
which is currently local time for Central Indiana and Ohio.

2:00–2:30   *Refreshments and conversation*

2:30–3:30   **Stable representation theory and the analytical assembly map**
DANIEL RAMRAS, New Mexico State University

3:30–4:00   *More refreshments and conversation*

4:00–5:00   **Positive linear combinations of projections in certain finite C*-algebras and in their multiplier algebras**
VICTOR KAFTAL,   University of Cincinnati

5:00–...   *Refreshments and farewells*

The purpose of Wabash Seminar talks is to present surveys of interest to all analysts, including graduate students and scholars working in areas far from the speaker's specialty. Come and meet your fellow analysts, learn what's going on, and spread the word.

Next Meeting: April 6

For further information call

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Stable representation theory and the analytical assembly map

DANIEL RAMRAS

In his thesis, Lusztig gave a proof of the classical Novikov Conjecture for free abelian groups using families of flat bundles. The aim of this talk is to explain how a variation on Lusztig's ideas can be used to provide new proofs of the strong Novikov conjecture for certain nonabelian groups, including surface groups and torsion-free crystallographic groups. This approach can be formalized in terms of stable representation theory. In this setting, one has a coassembly map connecting representations to topological K-theory, and rational surjectivity (in a weak sense) of this coassembly map implies rational injectivity of the analytical assembly map. This is joint work with Rufus Willett and Guoliang Yu.

Positive linear combinations of projections in certain finite C*-algebras and in their multiplier algebras

VICTOR KAFTAL

I will discuss the following topics:

- When is every element in a C*-algebra a linear combination of projections?

- When is every positive element of a C*-algebra a linear combination of projections with positive coefficients? With equal coefficients?

- Which positive elements of a W*-algebra (resp., a multiplier algebra) are strongly (resp., strictly) converging infinite sums of projections ?

Our most recent results for the first two questions deal with multiplier algebras of certain C*-algebras with finitely many extremal tracial states and with strict comparison of projections. A key step is showing that then the multiplier algebra also has strict comparison of projections.

This is joint work with Ping W. Ng and Shuang Zhang