WABASH
EXTRAMURAL MODERN ANALYSIS
SEMINAR

February 26

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	**Index theorem of proper cocompact group action** *HANG WANG, Vanderbilt University*
3:30–4:00	*More refreshments and conversation*
4:00–5:00	**The Cuntz semigroup of pullbacks of $C(X)$-algebras** *FRANCESC PERERA, Universitat Autònoma de Barcelona*
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 9

For further information call

Marius Dadarlat, Purdue University, (765) 494–1940
E–mail: mdd@math.purdue.edu
Web: http://www.math.purdue.edu/~mdd/Wabash/

Index theorem of proper cocompact group action

HANG WANG

I will present the construction of an index formula for the G-invariant elliptic pseudo-differential operators acting on a complete Riemannian manifold, where a unimodular, locally compact group G acts properly and cocompactly. The idea, suggested by Gennadi Kasparov, is to calculate the von-Neumann trace of the K-theoretic index of the elliptic operators. The work, inspired by the L^2 index theory in case of a free cocompact group action (Atiyah 76) and in case of the homogeneous spaces for Lie group (Connes, Moscovici 82), serves as a generalization of the two papers. The history, motivations and important elements of index theory will be introduced in the beginning for the general audience.

The Cuntz semigroup of pullbacks of $C(X)$-algebras

FRANCESC PERERA

The Cuntz semigroup is a powerful techical device that can be attached to any C*-algebra. This invariant is essentially constructed as a continuous version of the projection semigroup (built out of Murray-von Neumann equivalence classes of projections). Its order, not algebraic except in trivial situations, happened to be the key feature that helped in distinguishing two non-isomorphic C*-algebras with the same Elliott invariant. The fact that, for important classes of algebras, the said invariant can be recovered functorially from the semigroup, brought attention to its possible use in the classification programme. There is thus a strong need for computational techniques of the Cuntz semigroup for various classes of algebras, particularly non-simple ones. In this talk we shall present some of the techniques involved to compute the semigroup of certain pullbacks and applications to $C(X)$-algebras for spaces of low dimension.

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Cars will be leaving from the Math Sciences Building at 1:30 p.m. (sharp!).
(Meet near the elevators on the main floor.)
If you wish to ride, please tell Marius Dadarlat (Math 708; phone 41940) by Thursday, February 26.

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