

WABASH
EXTRAMURAL MODERN ANALYSIS
SEMINAR

February 16, 2008

2:00 p.m.

at

Wabash College

in rooms 114 and 118 Baxter Hall

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

- 2:00–2:30** *Refreshments and conversation*
- 2:30–3:30** **Fell bundles associated to groupoid morphisms**
VALENTIN DEACONU, University of Nevada at Reno
- 3:30–4:00** *More refreshments and conversation*
- 4:00–5:00** **On Rankin-Cohen Deformations**
YI-JUN YAO, Vanderbilt University
- 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 19, 2008

For further information call

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Fell bundles associated to groupoid morphisms

VALENTIN DEACONU

Given a continuous open surjective morphism $\pi : G \rightarrow H$ of étale groupoids with amenable kernel, we construct a Fell bundle E over H and prove that its C^* -algebra $C_r^*(E)$ is isomorphic to $C_r^*(G)$. This is related to results of Fell concerning C^* -algebraic bundles over groups. We conclude that $C_r^*(G)$ is strongly Morita equivalent to a crossed product, the C^* -algebra of a Fell bundle arising from an action of the groupoid H on a C^* -bundle over $H^{(0)}$. We apply the theory to groupoid morphisms obtained from extensions of dynamical systems and from morphisms of directed graphs with the path lifting property. We also prove a structure theorem for abelian Fell bundles. (This is joint work with Alex Kumjian and Birant Ramazan)

On Rankin-Cohen Deformations

YI-JUN YAO

Appeared in the study of deformation questions related to modular forms, Rankin-Cohen brackets (for two modular forms) are bi-differential operators which give "new" modular forms. They entered the domain of noncommutative geometry via the work of Connes-Moscovici in which some hidden Hopf algebraic structure was revealed. We will discuss some recent results on both the modular forms and the Hopf algebra.