

**General Mathematics Seminar
of the
University of Luxembourg**

**In cooperation with the
Luxembourg Mathematical Society**

April 2012

Tuesday, 10 April 2012, at 17:00

Campus Kirchberg, room B02

Piotr M. Hajac
(IMPAN / Uniwersytet Warszawski)

Stable triviality criterion for associated noncommutative line bundles

The aim of this talk is to state, explain, and prove a general criterion for the stable freeness of the finitely generated projective modules associated to principal comodule algebras via one-dimensional corepresentations. This framework includes the principal coactions of discrete groups on unital C^* -algebras. As a concrete application of this criterion, I will sketch proofs of the stable non-triviality of the non-zero winding number line bundles over quantum real and complex projective spaces of an arbitrary dimension n .

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Tuesday, April 17, 2012 at 17:00

Campus Kirchberg, room B02

Prof. Dr. Pavle Pandzic
(University of Zagreb)

Dirac cohomology and unipotent representations

I will first review the concepts of reductive Lie group representations and their algebraic analogues, (\mathfrak{g}, K) -modules. Then I will introduce the concept of Dirac cohomology, including motivation and some applications. Most of the talk will be about examples, starting with the case of $SL(2, \mathbb{R})$ and moving on to unipotent representations of the symplectic groups. I will show how to calculate the Dirac cohomology of these representations.