

MATHEMATICS SEMINAR
of the
UNIVERSITY OF LUXEMBOURG
in cooperation with the
LUXEMBOURG MATHEMATICAL SOCIETY

May 2010

11 May 2010, at 5 pm

Room B.02

Ivan Nourdin
University Paris 6

Universal Gaussian fluctuations of non-Hermitian matrix ensembles

Abstract

My goal is to explain how to prove multi-dimensional central limit theorems for the spectral moments (of arbitrary degrees) associated with random matrices with real-valued i.i.d. entries, satisfying some appropriate moment conditions. The used techniques rely on a universality principle for the Gaussian Wiener chaos, as well as on some combinatorial estimates. All necessary probabilistic notions will be introduced and discussed during the talk. This presentation is based on a joint work with Giovanni Peccati.

18 May 2010, at 5 pm

Room B.02

Sergei Akbarov
Russian Institute of Scientific and Technical Information

Duality for Stein groups with algebraic connected component of identity

Abstract

We describe a new way to generalize Pontryagin duality from the category of commutative Stein groups to the category of (not necessarily commutative) Stein groups with algebraic connected component of identity (ArXiv.0806.3205). Our approach is based on the idea of replacing the category of Banach spaces with the category of stereotype spaces (i.e. topological vector spaces, which are reflexive with respect to the topology of uniform convergence on totally bounded sets). This yields to a generalization, where the enveloping category consists of Hopf algebras in the symmetrical monoidal category of stereotype spaces. As an application to quantum groups we show how this duality works in the case of the group “ $az+b$ ”.

25 May 2010, at 5 pm

Room B.02

Gregory Ginot
University Paris 6

Higher Hochschild (co)homology

Abstract

The Hochschild (co)homology is a useful tool which appears in algebra, deformation theory, algebraic geometry and algebraic topology. It comes with many algebraic structures, some of them we will recall. It is folklore philosophy to think as these structures as being related to some kind of circle action on Hochschild (co)chain complexes. We will explain a precise mathematical way which allows to see the Hochschild (co)chain complex as a cohomology theory functorially modelled on the circle. We will then explain how this theory can be generalized to include any topological spaces in place of the circle.