General Mathematics Seminar
of the
University of Luxembourg
in cooperation with the
Luxembourg Mathematical Society

November 2011

Tuesday, November 08, 2011, at 17:00 **Campus Kirchberg, room B02**

Lara Thomas
(ENS Lyon)

Formal group exponentials and ramified Witt vectors to solve Galois module questions in Lubin-Tate extensions

Abstract:

In this talk, we shall give explicit descriptions of integral normal basis generators for some modules in abelian totally, weakly and wildly ramified extensions of any p-adic field. Our construction comes from the combination of several tools : formal group exponentials, Lubin-Tate theory, and the theory of ramified Witt vectors. In this manner, we shall generalise two recent works : Pickett's construction of some local integral Galois module generators which extends that of Erez, as well as the theory of Pulita's formal power series for the study of rank one solvable p-adic differential equations.

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Tuesday, November 15, 2011, at 17:00 **Campus Kirchberg, Room B02**

Jacques Franchi
(Universit*é* de Strasbourg)

Non-explosion criteria for relativistic diffusions

Abstract:

Relativistic diffusions live on the unit tangent bundle of a given Lorentz manifold, and have their law invariant with respect to the isometries of this Lorentz manifold. In the Riemanniann setting a big amount of work has been made to find out nice conditions ensuring the non-explosion of Brownian motion, that is, the so-called stochastic completeness. The aim is here to provide analogous criteria in the Lorentzian case, which is really more difficult to handle.

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Tuesday, November 22, 2011, at 17:00 **Campus Kirchberg, Room B02**

Mario Maican
(Institute of Mathematics of the Romanian Academy, Bucharest, Romania)

On some moduli spaces of sheaves supported on plane curves

Abstract:

We will classify the Gieseker semi-stable plane sheaves supported on curves of degree four, five and, in some cases, six. We will give natural stratifications for their moduli spaces. The strata are defined by means of cohomological conditions and have concrete geometric descriptions.