

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

September 2008

16 September 2008, at 4 pm

Room 3.04 bs

Anne Pichereau
Centre de Recerca Matemàtica, Barcelona

Formal deformations of Poisson structures in low dimensions

Abstract

As in the classical cases of associative or Lie brackets, there is a cohomology that governs the existence of formal deformations and the existence of extensions of deformations of Poisson structures. This cohomology is the so-called Poisson cohomology. In this talk, we consider a family of Poisson structures on the affine space of dimension 3, F^3 , and a family of singular Poisson surfaces in F^3 , both families being associated to weight-homogeneous polynomials that admit an isolated singularity. We then obtain a classification of all formal deformations of these Poisson structures, using some results of Poisson cohomology.

16 September 2008, at 5 pm

Room 3.04 bs

Artem Pulemotov
Cornell University

The Li-Yau-Hamilton estimate and the Yang-Mills heat equation

Abstract

The talk will focus on two connected subjects. First, we will discuss the Li-Yau-Hamilton estimate for the heat equation on a manifold M with nonempty boundary. Results of this kind play a significant part in the study of geometric flows. Second, we will talk about the Yang-Mills heat equation in a vector bundle over M . Our interest is mainly in the long-time existence of solutions.