



# General Mathematics Seminar (GMS)

## of the University of Luxembourg

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in cooperation with the Luxembourg Mathematical Society

**Tuesday 22 November 2016, 4 pm      Campus Kirchberg (B2)**

**Prof. Victor Nistor** Université de Lorraine, Metz

Victor Nistor is Professor in the Mathematics Department at University of Lorraine. His prizes and awards are: Sloan Fellow, July 1995 to June 1997. National Young Investigator Award, August 1, 1994 to July 30, 1999. He has received several prizes at student and high school mathematics competitions. Honorary member of the Mathematical Institute of the Romanian Academy and of the Penn State Institute for Gravity and the Cosmos. Keynote speaker in one of the mini-symposia of the European Congress of Computational Mechanics, Paris, and of US Natl. Cong. Comp. Mechanics, Raleigh.



### ***Analysis on singular and noncompact spaces and Lie algebroids***

After reviewing the definition of a Lie algebroid and a related Serre-Swan theorem, I will explain how Lie algebroids can be used to model simple singularities starting with conical and edge singularities. Then I will explain how the structural algebroid, which plays the role of the tangent space, leads to a natural class of Riemannian metrics, called "compatible metrics." One of the main results gives a connection between the structure of the Lie algebroid and the analysis of the geometric operators associated to a compatible metric (Laplace, Dirac, ...). This results expresses Fredholm criteria in terms of operators invariant with respect to suitable groups, which allows to use tools from harmonic analysis. These results are part of joint works with B. Ammann, R. Lauter, B. Monthubert, and others.

Coffee and cookies: 15:30 in the first floor open space of block G of campus Kirchberg.  
Time and place: 16:00 (4 p.m.) in the lecture theatre B2 of the main building on Kirchberg.

RMATH contact: Anton Thalmaier

Coordinator: Alexander D. Rahm