

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

**October 2008**

**14 October 2008, at 5 pm**

**Room 3.04 bs**

Julien Roth  
Université de Marne-la-Vallée

**Spinorial characterization of surfaces into 3-homogeneous manifolds**

Abstract

We give a spinorial characterization of isometrically immersed surfaces into 3-dimensional homogeneous manifolds with 4-dimensional isometry group in terms of existence of a particular spinor field, called generalized Killing spinor. This extends works by T. Friedrich for  $R^3$  and B. Morel for  $S^3$  and  $H^3$ . The main argument is the interpretation of the energy-momentum tensor of a generalized Killing spinor as the second fundamental form of the immersion up to a tensor depending on the structure of the ambient space.

**21 October 2008, at 5 pm**

**Room 2.04 bs**

Léonard Todjihounde  
National University of Benin

**Harmonic nets in metric spaces**

Abstract

We investigate harmonic maps from weighted graphs into metric spaces that locally admit centers of gravity, like Alexandrov spaces with upper curvature bounds, and we prove an existence result by constructing an iterative geometric process that converges to such maps, called harmonic nets.

28 October 2008, at 5 pm

Room 2.04 bs

Oleg K. Sheinman  
Steklov Mathematical Institute, Moscow

**Hamiltonian properties of Lax equations on Riemann surfaces**

Abstract

We will define the universal Krichever-Phong symplectic structure related to Lax equations, construct (following I.Krichever) corresponding integrable hierarchies and Hamiltonians for the equations of those. We will outline the generalizaion of the theory related to an arbitrary Lax operator algebra.