

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

**October 2006**

**24 October 2006 at 5 pm**

**Room 3.04 bs**

Oleg Sheinman  
Steklov Institute Moscow

*Infinite-dimensional Lie algebras related to holomorphic bundles on Riemann surfaces*

We will define the algebras of Lax operators related to an arbitrary Riemann surface and algebra  $gl(n)$  (construction due to I.Krichever), and present its generalization on  $so(n)$  and  $sp(2n)$  (joint result of I.Krichever and the author). We will consider central extensions of those algebras and comment on their relation to Atiyah algebras introduced by Beilinson and Schechtman. The talk continues the one I have given in Luxembourg last year. I will comment on advances in the subject and problems to be resolved.

**31 October 2006 at 5 pm**

**Room 3.04 bs**

Martin Olbrich  
University of Luxembourg

*Dynamical zeta functions and representation theory*

We discuss Ruelle and Selberg zeta functions, which are associated with the geodesic flow of negatively curved locally symmetric spaces. Initially, they are defined on a certain complex half plane. The main issue will be the understanding of the singularities of the meromorphic continuation of these functions. We present results and conjectures providing such an understanding in terms of representations of the group of isometries of the corresponding globally symmetric space.