

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

**November 2009**

**10 November 2009, at 5 pm**

**Room B02**

Gregor Fels  
University of Tübingen

**How round is the unit sphere: Tubes in the CR-Geometry**

Abstract

After a brief introduction to Cauchy-Riemann geometry we discuss the importance of tube manifolds as testing ground for various geometric phenomena, including certain types of degeneracy. We will also address the classification problem of tube manifolds and its relation to certain associative nilpotent algebras.

**17 November 2009, at 2 pm**

**Room B14**

Batu Güneysu  
University of Bonn

**The Feynman-Kac formula for Schrödinger operators on vector bundles**

Abstract

In this talk, I will explain how the Feynman-Kac formula can be generalized to a certain class of Schrödinger-type operators on vector bundles over complete Riemannian manifolds. This class includes nonnegative "potentials" which are locally square integrable.

**17 November 2009, at 5 pm**

**Room B02**

Hongxin Guo  
Wenzhou University, China

### **Geometry of gradient Ricci solitons**

#### **Abstract**

Ricci solitons play a fundamental role in the studies of the Ricci flow. They are solutions which evolve only by diffeomorphisms and scalings and occur at singularity formation and as asymptotic limits of long-time solutions. In this talk, I will report some progress towards the understanding of geometries of gradient Ricci solitons.