

General Mathematics Seminar  
of the  
University of Luxembourg  
in cooperation with the  
Luxembourg Mathematical Society

**May, 2014**

**Tuesday, May 6, 2014 at 17.00**

**Campus Kirchberg, Room B02**

Prof. Julien Grivaux  
(Université d'Aix-Marseille)

**Orbifold cohomology via Gromov–Witten invariants**

Abstract: In this talk, I will present Kontsevich's original approach for counting nodal rational curves in the complex projective plane. Then I will explain how this construction generalises to a wider context: pseudo-holomorphic curves can be used to deform the cohomology ring of a complex manifold, leading to Gromov–Witten invariants and quantum cohomology. If time permits, I will give an important application: for Deligne–Mumford stacks, quantum cohomology can be used to produce a nontrivial ring structure on the cohomology of the inertia stack.

General Mathematics Seminar  
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May, 2014

Tuesday, May 20, 2014 at 17.00

Campus Kirchberg, Room B02

Prof. Uwe Semmelmann  
(Universität Stuttgart)

**Almost complex structures on quaternionic Kähler manifolds and symmetric spaces**

Abstract: In my talk I will explain how to prove the non-existence of almost complex structures on certain classes of manifolds, e.g. quaternion Kähler manifolds and homogeneous spaces of non vanishing Euler characteristic. The proof is based on the Atiyah–Singer index theorem and elementary calculations with characteristic classes. This is a joint work with Paul Gauduchon and Andrei Moroianu.