Basel-Freiburg-Nancy-Strasbourg Joint Seminar in Algebraic and Complex Geometry

February 7th 2017

Oliver Bräunling (Freiburg)

Title: K-theory of étale p-torsion sheaves and Cartier modules

Abstract: I will discuss the so-called "K-theory of semi-linear endomorphisms", going back to Quillen and Grayson. I'll present some new computations. The idea is to use a positive characteristic version of the Riemann-Hilbert correspondence (à la Emerton-Kisin and Böckle-Pink) to get a handle on the case of semi-linear endomorphisms coming from the Frobenius.

Enrica Floris (Basel)

Title: Invariance of plurigenera for foliations on surfaces.

Abstract: Recently, Brunella and McQuillan proved some of the main results of birational geometry in the setup of foliations on surfaces. In this talk, we will discuss to which extent the theorem of Invariance of Plurigenera is true for foliations on surfaces. This is a joint work with Paolo Cascini.

Arvid Perego (Nancy)

Title: Kählerness of moduli spaces of sheaves over non-projective K3 surfaces

Abstract: Kählerness of moduli spaces of slope-stable sheaves over K3 surfaces is in known only in particular cases: if the base K3 surface is projective, the moduli spaces are known to be quasi-projective; if the dimension of the moduli space is 2, then it is a K3 surface; in higher dimension, the moduli spaces which parameterize only locally free sheaves are known to be Kähler. In this talk I will expose some recent results about the remaining cases: in particular, i will show that a moduli space of slope-stable sheaves (whose rank and first Chern class are prime to each other, and where the stability is with respect to a generic polarization) is Kähler if and only if its second Betti number is the sum of its Hodge numbers $h^{2,0}$, $h^{1,1}$ and $h^{0,2}$.

Robert Laterveer (Strasbourg)

Title: On a conjecture of Voisin

Abstract: Around 1994, C. Voisin has made a conjecture concerning algebraic 0-cycles on smooth projective complex varieties of geometric genus 1. We will explain this conjecture, and review cases (both old and new) where the conjecture is known.