Workshop
Automorphisms of Affines Spaces

LYON - October 7-8 2010

Schedule

Thursday 10h30-11h30, Salle Fokko du Cloux :

Contractible counter-examples to the Cancellation Problem
Pierre-Marie POLONI (Universität Basel)

Abstract : we give examples of non isomorphic smooth contractible affine threefolds X and Y with isomorphic cylinders $X \times \mathbb{C}$ et $Y \times \mathbb{C}$. Furthermore, we construct a biholomorphism between X and Y. These varieties are natural generalizations of the famous Russell cubic threefolds. (Joint work with A. Dubouloz and L. Moser-Jauslin).

Thursday 11h45-12h45, Salle Fokko du Cloux :

Flag varieties, toric varieties and suspensions : three instances of infinite transitivity
Karine KUYUMZHIYAN (Institut Fourier, Grenoble)

Abstract : (Joint work with I.V. Arzhantsev and M. Zaidenberg) A group G is said to act infinitely transitively on a set X if for every m the diagonal action of G on the cartesian product without diagonals $X^m \setminus \Delta$ is transitive. In this talk, we describe three classes of varieties whose automorphism groups act infinitely transitively on the set of smooth points : cones over flag varieties, non degenerate toric varieties and iterated suspensions over varieties that already have this property. An idea of the proof will be given in each case.

Thursday 14h30-15h30, Salle Fokko du Cloux :

Additive group actions on cyclic covers
Lucy MOSER-JAUSLIN (Institut de Mathématiques de Bourgogne, Dijon)

Abstract : (Joint work with G. Freudenburg) In this talk, we describe a method to study the actions of the additive group $\mathbf{C}_+$ on certain affine varieties. Such actions correspond to locally nilpotent derivations of the coordinate ring R of the variety. Given a domain R and an element $f \in R$, the aim is to relate locally nilpotent derivations of the ring $R[z]/(z^n - f)$ with the properties of f. For instance, we find new sufficient conditions for the rigidity of such rings. Also, we obtain new results on homogeneous locally nilpotent derivations with respect to a cyclic group action.

Thursday 16h00-17h00, Salle Fokko du Cloux :

Flexible varieties and automorphism groups
Mikhail ZAIDENBERG (Institut Fourier, Grenoble)

Abstract : (Joint work with I. Arzhantsev, H. Flenner, S. Kaliman and F. Kutzschebauch) A smooth affine variety is called flexible if its locally nilpotent vector fields span its tangent space at every point. For instance, in a joitn work with I. Arzhantsev and K. Kuyumzhiyan, we established that cones over flag varieties as well as toric varieties are flexible. For such varieties, the automorphism group act m-transitively for every m. It turns out that this property characterizes flexible varieties.

Friday 10h30-11h30, Salle 112 :

Anneaux et variétés
Miles REID (University of Warwick)

Abstract : Je commence avec la relation élémentaire entre les anneaux et les variétés affines et projectives, surtout les anneaux gradués en degré positif et les variétiés projectives à poids. Après ça, je raconterai des constructions plus ou moins récentes d'algèbres graduées ayant des applications à des problèmes assez classiques de courbes et surfaces.

Friday 14h, Amphi Jussieu, Bâtiment Darwin :

Soutenance d'Habilitation à Diriger des Recherches
Stéphane LAMY (Insitut Camille Jordan et University of Warwick)