Séminaire d'algèbre, topologie et géométrie
Jeudi 12 mai à 14h
Salle Fizeau

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Fano manifolds with Lefschetz defect 3

Attention : salle inhabituelle

After a short discussion on divisors, numerical equivalence and Fano manifolds, we introduce the Lefschetz defect, which is a numerical invariant associated to a complex Fano manifold X, and it depends on the Picard number of prime divisors contained in X. Its main property is that if the Lefschetz defect of X is at least 4, then X is isomorphic to a product SxT, with S a del Pezzo surface (i.e. a Fano variety of dimension 2). In this talk we discuss a classification result for Fano manifolds with Lefshetz defect 3 : although X is not necessarily a product, it still has a very explicit description. That is, there exist a smooth Fano variety T of dimension dim T = dim X - 2, and a fibration from X to T such that the fibres are del Pezzo surfaces, σ factorizes as a projectivization of a rank 3 vector bundle over T and the blow-up along three pairwise disjoint smooth, irreducible, codimension 2 subvarieties, horizontal for the projectivization over T. We explicitly describe all possible rank 3 vector bundles and centres of the blow-up.