Séminaire de géométrie algébrique de Rennes[1]

Exposé du jeudi 25 mars 2010

HIGHER DIRECT IMAGES OF THE STRUCTURE SHEAF IN POSITIVE CHARACTERISTIC.

KAY RÜLLING (ESSEN)

Résumé : Let $f : X \to Y$ be a proper and birational morphism over a perfect field k of characteristic $p \geqslant 0$ and assume that X is smooth over k and connected and that Y is normal and has tame quotient singularities. In the talk we explain why the higher direct images of the structure sheaf and the canonical sheaf are zero in this situation. In case $k = \mathbb{F}_q$ we obtain as a corollary that the number of $\mathbb{F}_q$-rational points in the fiber over each $\mathbb{F}_q$-rational point of Y is one modulo q. This is joint work with A. Chatzistamatiou.

[1]Les jeudis matin, de 10 h 30 à 11 h 30, salle 004, IRMAR (bâtiment 22), Université de Rennes 1, Campus de Beaulieu