Séminaire d'algèbre, topologie et géométrie
Jeudi 4 juillet à 14h
Salle I

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Curves with low gonality and base field extension

Given a curve C defined over a perfect field k, denote γ its gonality (i.e., the least degree of a morphism to $\mathbb{P}^1$ defined over k), and $\bar{\gamma}$ its geometric gonality (i.e., the gonality of its base change to an algebraic closure of k).
We are interested in the change of the gonality under base change. A well-known result, attributed to Mestre, is that a curve which has even genus and gonality 2 over a field, has gonality 2 over any subfield where it is defined. Under the hypothesis that the gonality is sufficiently small with respect to the genus (more precisely : $(\bar{\gamma} - 1)^2 < g$), we generalize this to curves whose genus and gonality have the same parity. We also study the pairs $\gamma, \bar{\gamma}$ which can occur for $g < 6$.
This is joint work with Xavier Xarles.