Stanford Algebraic Geometry Seminar

UNRAMIFIED CORRESPONDENCES

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Abstract

The main result I am going to talk about is the following theorem (jointly with Yuri Tschinkel):
Theorem. For any hyperelliptic curve X there is an unramified covering of degree 72 which has a surjective map of degree 4 on a curve of genus 2 given by equation $y^6 = x(x-1)$.
The above covering of X is obtained as sequence of abelian coverings with groups $\mathbb{Z}_2, \mathbb{Z}_3 + \mathbb{Z}_3, \mathbb{Z}_2, \mathbb{Z}_2$ respectively.
I will also discuss its implications (some form of effective Mordell estimates for hyperelliptic curves) and potential generalizations.
The above reults points in the direction of the following Wild conjecture (supported by theorem above):
For any curves $C, C', g(C) > 1$ defined over $\bar{Q}$ there exists a nonramified covering $\tilde{C}$ of C which has a surjective map $f : \tilde{C} \to C'$

Tuesday, December 17
4:00 p.m.
Room 380C

http://math.stanford.edu/~vakil/seminar0203/seminar.html.