Graduiertenkolleg

Experimentelle und konstruktive Algebra

RWTHAACHEN
UNIVERSITY

Experimental and
constructive
algebra

Kolloquiumsvortrag

Freitag, 21. Juni 2013, 14:00 Uhr, Hörsaal III

JEROEN SIJSLING (UNIVERSITY OF WARWICK, GROSSBRITANNIEN): *Galois descent for algebraic curves*

This talk is concerned with Galois invariance properties of curves. Let L/k be an extension of fields. Let C be an algebraic curve over L, defined as the zero locus of a set of polynomials $\{f_1, ..., f_n\}$. Suppose that for all automorphisms σ of L fixing k, the conjugate curve C^σ (which is simply the zero locus of the conjugated set of polynomials $\{f_1^\sigma, ..., f_n^\sigma\}$) is isomorphic over L with C. Does there then exist a curve C_0 over k that becomes isomorphic with C over L?

Contrary to what one may intuitively expect, the answer to this question is usually not affirmative. The obstruction is a cohomological one, but it is a challenge to make it explicit and amenable to computation. We explore what happens in progressively more complicated situations, from conics to elliptic curves to hyperelliptic curves and finally to plane quartics. This is joint work with Reynald Lercier and Christophe Ritzenthaler.

Wir laden alle Interessierten herzlich ein.

Ab 13:15 Uhr gibt es Kaffee und Tee in der Bibliothek des Lehrstuhl D für Mathematik.