ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

3. Number Theory and Arithmetic Algebraic Geometry

1991 MS Classification: 11R32, 11Y40, 12F12
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Explicit Galois realization of transitive groups of degree up to 15

For all transitive groups up to degree 15 we compute a polynomial $f \in \mathbf{Q}[x]$ with $\mathrm{Gal}(f) = G$. We present different methods which allows us to realize nearly all of these groups. The few remaining cases are already studied in the literature or we give special solutions. Since complete tables are known up to degree 11, we specially look at transitive groups of degree 12-15. Most of the presented methods are independent of the ground field, but explicit computations have only been done for the ground field $\mathbf{Q}$. This result is a joint work with G. Malle.