

Thorne, Jack**Arithmetic invariant theory and 2-descent for plane quartic curves. With an appendix by Tasho Kaletha.** (English) [Zbl 1416.11044](#)[Algebra Number Theory](#) 10, No. 7, 1373-1413 (2016).

Summary: Given a smooth plane quartic curve C over a field k of characteristic 0, with Jacobian variety J , and a marked rational point $P \in C(k)$, we construct a reductive group G and a G -variety X , together with an injection $J(k)/2J(k) \hookrightarrow G(k)\backslash X(k)$. We do this using the Mumford theta group of the divisor 2Θ of J , and a construction of Lurie which passes from Heisenberg groups to Lie algebras.

In the appendix a converse to Lurie's functorial construction of simply laced Lie algebras is given by Tasho Kaletha.

MSC:

- [11D25](#) Cubic and quartic Diophantine equations
- [11E72](#) Galois cohomology of linear algebraic groups
- [14H40](#) Jacobians, Prym varieties

Cited in 4 Documents

Keywords:[arithmetic geometry](#); [descent](#); [invariant theory](#)**Full Text:** [DOI](#)