
Solving Thue equations

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Let $F(x, y) \in \mathbb{Z}[x, y]$ be a homogeneous polynomial of degree ≥ 3 , irreducible over \mathbb{Q} , and let $0 \neq m \in \mathbb{Z}$. The Thue equation

$$F(x, y) = m \text{ in } x, y \in \mathbb{Z}$$

plays an important role in the theory and applications of Diophantine equations. The first general finiteness results on the number of solutions, the first applications of Baker's method, the first reduction algorithm etc. were all connected with Thue equations and were later successfully applied to other important classes of Diophantine equations.

In our talk we give a brief survey of these results and explain a new efficient algorithm to calculate "small" solutions of relative Thue equations. This method had already applications in describing generators of power integral bases in certain algebraic number fields.