Integral Solutions of Thue Equations

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Abstract

In this talk we first give a survey of results on the integral solutions of Thue Equations. Next, we present a polynomial type upper bound for the size of the integral solutions of Thue equations $F(X,Y) = m$ defined over a totally real number field K, assuming that $F(X,1)$ has at least a non real root and, for every couple of non real conjugate roots $(\alpha, \bar{\alpha})$ of $F(X,1)$, the field $K(\alpha, \bar{\alpha})$ is a CM-field. Using this result, we derive an improved upper bound for the solutions of the unit equation defined over a totally real number field, which allows us to deduce an upper bound for the integral solutions of Thue equations defined over a totally real number field.