1067-Z1-1290 **Daniel P. Wisniewski*** (`Daniel.Wisniewski@desales.edu`), Department of Mathematics/Computer Science, DeSales University, 2755 Station Avenue, Center Valley, PA 18034, and **Helen G. Grundman** (`grundman@brynmawr.edu`), Department of Mathematics, Bryn Mawr College, 101 N. Merion Avenue, Bryn Mawr, PA 19010. *Tetranomial Thue Equations of Small Degree.* Preliminary report.

A Thue equation is one of the form

$$|F(x, y)| = 1,$$

where F is a homogeneous, irreducible polynomial in $\mathbf{Z}[x, y]$ of degree at least three. We consider the particular problem of bounding the number of integer solutions (p, q) to the *tetranomial* Thue equation, where

$$F(x, y) = a_0x^n + r_0x^m y^{n-m} - s_0x^k y^{n-k} + t_0y^n,$$

with $n > m > k > 0$, $a_0 > 0$, and $r_0, s_0, t_0 \neq 0$, such that

$$0.99a_0n > |r_0|m \qquad \text{and} \qquad 0.99|t_0|n > |s_0|(n - k).$$

In this talk, I will summarize the methods we used to prove that if $n \geq 50$, then the tetranomial Thue equation $|F(x, y)| = 1$ has at most 36 solutions $(p, q) \in \mathbf{Z}^2$ with $|pq| \geq 2$ (where (p, q) and $(-p, -q)$ are counted as a single solution). I shall also discuss our recent work on calculating comparable upper bounds when the degree of this Thue equation is less than 50, and note how the previous approach and techniques need to be modified. (Received September 20, 2010)