

1050-11-29

Michael P. Knapp* (mpknapp@loyola.edu), Loyola College, 4501 North Charles Street,
Baltimore, MD 21210-2699. *Simultaneous diagonal equations of odd degrees*. Preliminary report.

In this talk, we will consider a system of two diagonal equations

$$\begin{aligned}a_1x_1^k + \cdots + a_sx_s^k &= 0 \\ b_1x_1^n + \cdots + b_sx_s^n &= 0\end{aligned}$$

where the coefficients are ordinary integers and the degrees k and n are odd. We will show that if $\{k, n\} \neq \{5, 3\}$ and the number of variables is at least $k^2 + n^2 + 1$, then this system must have a nontrivial solution in p -adic integers for every prime p . (Received January 06, 2009)