

1071-11-283

Alice Medvedev* (alice@math.berkeley.edu) and **Thomas Scanlon**. *Zhang's Conjecture for upper-triangular polynomial dynamical systems on \mathbb{A}^n* . Preliminary report.

Shou-Wu Zhang conjectured that nice algebraic dynamical systems $F : X \rightarrow X$ have points whose orbits under F are Zariski-dense in the underlying variety X . The other possibility is that the Zariski closure of the orbit is an F -invariant subvariety of X . One example of nice dynamical systems (very different from the sort of nice that Zhang had in mind) is *upper-triangular polynomial dynamical systems*, where $X = \mathbb{A}^n$ and

$$F(x_1, x_2, \dots, x_n) = (f_1(x_1), f_2(x_1, x_2), \dots, f_n(x_1, x_2, \dots, x_n))$$

for some polynomial $f_i \in K[x_1, \dots, x_i]$. Our previous results on product dynamical systems and a few observations about periodic points yield enough information about F -invariant varieties to produce points in the algebraic closure of K whose F -orbits are Zariski-dense in \mathbb{A}^n . (Received March 08, 2011)