1071-11-77 **Kalyani K. Madhu*** (kkmadhu@math.rochester.edu). *The Proportion of Periodic Points in $\mathbb{F}_p$.*

Let $f(x) = x^m + c$ be a polynomial in $\mathbb{F}_p[x]$. The orbit of any $\alpha \in \mathbb{F}_p$ under iteration of this map is finite; thus α is necessarily preperiodic. We consider the proportion of strictly periodic $\alpha \in \mathbb{F}_p$ and show that for certain classes of primes $p \in \mathbb{Z}$, the proportion of periodic α in $\mathbb{F}_p$ tends to zero as p becomes arbitrarily large. Our technique is to identify the Galois groups of the successive splitting fields of $f^n(x) - t$ over $\mathbb{F}_p(t)$, and to draw conclusions using Chebotarev's Density Theorem for function fields, similar to the technique used by Jones for quadratic polynomials over $\mathbb{Z}$ and Odoni for generic polynomials over number fields.

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