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Andrew Bridy*, andrewbridy@tamu.edu, and **Derek Garton**, gartondw@pdx.edu. *The cycle structure of unicritical polynomials in finite fields.*

Let $f(x) = x^k + a \in \mathbb{Z}[x]$ for $k \geq 2$. Consider the family of dynamical systems given by the action of f on \mathbb{F}_p as p varies among primes. The question of how and in what sense this family approximates a random family of dynamical systems has been studied extensively, motivated in part by Pollard’s “rho” algorithm for integer factorization. We show that for most choices of $a \in \mathbb{Z}$, the cycle structure in this family is “as random as possible” in an appropriate sense. As a corollary, we show that most members of these families have many cycles. (Received January 19, 2018)