Exposé court

85 *Friable polynomials with several prescribed coefficients over finite fields*

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In 2015, Bourgain investigated the distribution of primes with a positive proportion of preassigned bits. His method has been adapted in different settings, for example in 2016 Ha considered this question in the case of rational function fields over finite fields by studying the distribution of irreducible polynomials with preassigned coefficients.

In this talk, we explore this quesetion for friable (or smooth) polynomials. We recall that a polynomial is m-friable if all of its irreducible factors are of degree at most m.

Among others, we show that under some natural conditions, the number of m-friable polynomials of degree n with r preassigned coefficients over the finite field of size q tends to

$$\rho(n/m)q^{n-r},$$

where ρ is Dickman's ρ function.