Chebyshev’s bias for products of irreducible polynomials – II

(joint with X. Meng) For any finite field $F$, and for any positive integer $k$, we obtain an asymptotic for the difference of functions counting products of $k$ irreducible polynomials with coefficients in $F$ among different arithmetic progressions. We unconditionally derive the existence of the limiting distribution of this difference. In contrast to the “translation” in the ring of integers, we show the existence of complete biases in the function field setting, that is the difference function may have constant sign.