

Prescribing coefficients of invariant irreducible polynomials

Giorgos Kapetanakis

Sabanci University

Let \mathbf{F}_q be the finite field of q elements. We define an action of $\mathrm{PGL}(2, q)$ on $\mathbf{F}_q[X]$ and study the distribution of the irreducible polynomials that remain invariant under this action for lower-triangular matrices. As a result, we describe the possible values of the coefficients of such polynomials and prove that, with a small finite number of possible exceptions, there exist polynomials of given degree with prescribed high-degree coefficients.

This work was supported by TÜBİTAK Project 114F432.