
BEHZAD OMIDI KOMA, Carleton University

The number of irreducible polynomials of degree $q - 1$ over \mathbb{F}_q^\times with given trace and constant terms

The problem of estimating the number of irreducible polynomials with some prescribed coefficients of degree n over the finite field \mathbb{F}_q of q elements has been largely studied. We give a simple and precise formula for the number of irreducible polynomials of degree $n = q - 1$ over \mathbb{F}_q with given trace and primitive constant term. Then, we consider the number of irreducible polynomials of degree $n = q - 1$ over \mathbb{F}_q with given trace and any arbitrary constant term. For this latter number, we provide better bounds than the existing ones.