SHUXING LI, University of Delaware

Intersection Distributions and Related Steiner Systems

Given a polynomial f over finite field $\mathbb{F}_q$, its intersection distribution concerns the collective behaviour of a series of polynomials $\{f(x)+cx|c \in \mathbb{F}_q\}$. We outline the ideas determining the intersection distributions of degree three and degree four polynomials, from which Steiner systems $S(2, 3, 3^n)$ and $S(2, 4, 2^n)$ can be derived.