RYAN VINROOT, The College of William and Mary

Semisimple symplectic characters of finite unitary groups

Let $G = \mathrm{U}(2m, \mathbb{F}_q)$ be the finite unitary group defined over a finite field of order q, where q is the order of an odd prime p. We prove that the number of irreducible complex characters of G with degree coprime to p, and with Frobenius-Schur indicator -1, is equal to q^{m-1}. In particular, we find a (non-canonical) bijection between these irreducible characters and the set of self-dual polynomials of degree $2m$ over $\mathbb{F}_q$ with constant term -1. These results are joint work with Bhama Srinivasan, University of Illinois at Chicago.