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Vinogradov's mean value theorem in function fields

Let $\mathbb{F}_q[t]$ be the ring of polynomials over the finite field $\mathbb{F}_q$. In this talk, we will discuss a generalization of Vinogradov's mean value theorem in $\mathbb{F}_q[t]$. We will apply our result to obtain an upper bound for $\tilde{G}_q(k)$, which is the least integer s such that for every polynomial in $\mathbb{F}_q[t]$ of sufficiently large degree, the expected asymptotic formula in Waring's problem holds.

This is a joint work with Trevor Wooley.