1077-14-1896 **Justin D. Peachey*** (`jpeache@clemson.edu`). *Codes from separable linearized polynomials and associated Riemann-Roch spaces.*

Consider the extended norm-trace function field $\mathbb{F}_{q^r}(x, y)/\mathbb{F}_{q^r}$ defined by

$$x^u = L(y),$$

where $L(y)$ is a separable linearized polynomial which splits over $\mathbb{F}_{q^r}$. The norm-trace function field and the Hermitian function field are special cases of this function field. Our work yields explicit bases for certain Riemann-Roch spaces of the extended norm-trace function field. In this talk, we apply these bases to the construction and analysis of related algebraic geometry codes and to the determination of associated Weierstrass semigroups. These bases and codes give rise to explicit small-bias sets. We also consider an analogue of the Weierstrass semigroup for a finite graph and explore the similarities between it and the classical Weierstrass semigroup. (Received September 21, 2011)