GENERALIZED WEIERSTRASS SEMIGROUPS FOR CERTAIN CURVES WITH SEPARATED VARIABLES

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ABSTRACT. In this talk we present a study of the generalized Weierstrass semigroup $\widehat{H}(\mathbf{P}_m)$ at an m-tuple $\mathbf{P}_m = (P_1, \ldots, P_m)$ of rational points on certain curves admitting a plane model of the form $f(y) = g(x)$ over $\mathbb{F}_q$, where $f(T), g(T) \in \mathbb{F}_q[T]$. In particular, we compute the generating set $\widehat{\Gamma}(\mathbf{P}_m)$ of $\widehat{H}(\mathbf{P}_m)$ and, as a consequence, we explicit a basis for Riemann-Roch spaces of divisors with support in $\{P_1, \ldots, P_m\}$ on these curves, generalizing results of Maharaj, Matthews, and Pirsic in [1].

REFERENCES

[1] H. Maharaj, G. L. Matthews, and G. Pirsic, *Riemann-Roch spaces of the Hermitian function field with applications to algebraic geometry codes and low-discrepancy sequences*, J. Pure Appl. Algebra, 195 (3), (2015), 261–280.

[2] W. Tenório and G. Tizziotti, *Generalized Weierstrass semigroups and Riemann-Roch spaces for certain curves with separated variables*, Finite Fields and Their Applications 57, 2019, 230-248.