

Generalized Weierstrass semigroups and their Poincare series

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Abstract. This is a joint work with J.J. Moyano-Fernandez and W. Tenorio. We investigate the structure of the generalized Weierstrass semigroups at several points on a curve defined over a finite field. This allows us to associate to certain monoids of \mathbb{Z}^t combinatorial invariants such as the Poincare series and the semigroup polynomial. As a matter of fact, the semigroup polynomial determines the Poincare series and this series determines completely the monoid. Finally, we discuss functional equations under symmetry assumptions.