

Title: Numerical semigroups and algebraic-geometry codes

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Abstract: A numerical semigroup is a subset of \mathbb{N} containing 0, closed under addition and with finite complement in \mathbb{N} . An important example of numerical semigroup is given by the Weierstrass semigroup at one point of a curve. In the theory of algebraic geometry codes, Weierstrass semigroups are crucial for bounding the minimum distance and the generalized Hamming weights, for characterizing the set of non-redundant parity-checks and defining improvements on the dimension of codes, for analyzing the code length, or for characterizing isometry-dual sequences of algebraic-geometry codes. We present these applications and some theoretical open problems related to numerical semigroups.