

Weighted theta functions, and a coding analog

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A well-known analogy relates the theta function of a lattice and the Hamming weight enumerator of a linear code. Delsarte extended this analogy to theta functions and enumerators with harmonic weights. After reviewing the properties and some uses of harmonically weighted theta functions, we outline a new approach to Delsarte's discrete harmonic polynomials for binary linear codes, and some of applications of this approach that highlights the code-lattice analogy. This is joint work with Scott Kominers.

In collaboration with Scott Kominers