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Zeta functions for linear codes and their generalizations.

Zeta functions for linear codes are defined by Iwan Duursma in 1999. They are generating functions of Hamming weight enumerators of codes. They can also be defined for other homogeneous polynomials not corresponding to existing codes. For the existing codes, their Riemann hypothesis is believed to be closely related to the extremal property.

In this talk, we review some basic properties of zeta functions for linear codes and discuss some generalizations of them. Especially, we show that there are many invariant polynomials which satisfy the Riemann hypothesis. (Received December 09, 2011)