

1123-05-377

**Iwan M Duursma\*** (duursma@illinois.edu). *Rank weight as q-analogue of Hamming weight*. Preliminary report.

Delsarte (1976) points out the role of the rank weight as the  $q$ -analogue of Hamming weight. Certain properties for the Hamming weight hold for the rank weight after replacing binomial coefficients with Gaussian polynomials. We establish  $q$ -analogues for two such properties: The use of zeta functions as generating functions for weight distributions and the use of the Bombieri inner product to express MacWilliams identities. Joint work with Eimear Byrne, Iván Blanco-Chacón, and John Sheekey. (Received August 30, 2016)