Homogeneous Weight Enumerators
(Slight Return)

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Abstract

The MacWilliams identities fail for the homogeneous weight enumerator over matrix rings $M_{k \times k}(GF(q))$, $k \geq 2$, with only one exception: $k = q = 2$. More is true: for weights with maximal symmetry over a finite chain ring R, the only weights w on R for which the MacWilliams identities hold for the w-weight enumerator are the Hamming weight (any R) or the homogeneous weight (only for $|R| = 4$).

Keywords

Weight enumerator, MacWilliams identities.

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