

Failure of the MacWilliams Identities for the Lee Weight Enumerator over \mathbb{Z}_m , $m \geq 5$

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Abstract

The MacWilliams identities give a relation between the Hamming weight enumerator of a linear code and the Hamming weight enumerator of its dual. We are interested in the question of whether there is some version of the MacWilliams identities for the Lee weight over \mathbb{Z}_m , the integers modulo m . The Lee weight and the Hamming weight are equal when $m = 2$ or $m = 3$; thus the MacWilliams identities are valid in those cases. It is also known that the MacWilliams identities are valid for the Lee weight over \mathbb{Z}_4 . In this talk we show the nonexistence of any version of the MacWilliams identities for Lee weight enumerators over \mathbb{Z}_m , $m \geq 5$.

Keywords

Lee Weight, MacWilliams Identities .