

# Additive Codes over Rings

Steven T. Dougherty

*University of Scranton, Scranton, Pennsylvania, USA*

## Abstract

Additive codes over a ring are subsets of  $R^n$ , where  $R$  is any finite ring, that are closed under the additive operation of the ring. We describe the MacWilliams relations for additive codes and describe various uses of additive codes.

## Keywords

Codes over Rings, Additive Code, Characters .

## References

- [1] S.T. Dougherty and Cristina Fernandez-Cordob, Additive  $G$ -Codes over  $\mathbf{F}_q$  and their Dualities, to appear in FFA.
- [2] S.T. Dougherty, Jon-Lark Kim and Nari Lee, Additive Self-Dual Codes over Fields of Even Order, Bulletin of the Korean Mathematical Society, Vol. 55, No. 2, 341-357, 2018.
- [3] S.T. Dougherty, A. Korban and S. Sahinkaya, Self-Dual Additive Codes, Applicable Algebra in Engineering, Communication and Computing, 1-18, DOI 10.1007/s00200-020-00473-5.
- [4] S.T. Dougherty and Sara Myers, Orthogonality from Group Characters, to appear in Involve.