

1126-94-238

Heide Gluesing-Luerssen* (heide.gl@uky.edu) and **Tefjol Pllaha**

(tefjol.pllaha@uky.edu). *Extension Theorem for Codes over Finite Frobenius Bimodules.*

We investigate the MacWilliams extension theorem for codes over alphabets that have the structure of a finite Frobenius bimodule over a finite ring. More precisely, for various weight functions we investigate whether weight-preserving linear maps between such codes extend to weight-preserving automorphisms on the entire ambient space. In order to do so we need to study partitions induced by the given weight function and introduce their character-theoretic dual. While the former is a partition of M^n , the ambient space of the code, the latter is a partition in the character-module of R^n , where R is the underlying finite ring. The resulting duality theory of these partitions allows us to answer the extension theorem in the affirmative for various weight functions. (Received January 15, 2017)