

1135-VL-2135 **Erik Hieta-aho*** (eh991112@ohio.edu). *Error Correcting Codes within a Frobenius Ambient*. Preliminary report.

Traditionally in Algebraic Coding Theory a code is defined over a finite field as a subspace of a vector space with a specific parameter such as the Hamming distance. A code can then be mapped into an ideal of the corresponding polynomial quotient ring called the Ambient. Given a non-degenerate bilinear form it can be shown that the dual of a code as an ideal can be defined as the ideal's annihilator. By the development and duality of the Kerdock and Preparata families of codes the importance of codes over rings was established. It was shown by J. Wood that for codes over finite Frobenius rings a version of the Mac Williams equivalence theorem holds. Thus our project focuses on codes over Frobenius rings and codes within a specific Ambient ring as well as the properties that they have in common. This talk will focus on our preliminary results as well as open questions which we have developed in the midst of our research. (Received September 25, 2017)