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**Tom Blackford\*** (jt-blackford@wiu.edu), Department of Mathematics, Western Illinois University, Macomb, IL 61455. *Galois Variance of Constacyclic Codes*. Preliminary report.

A linear code over  $F_{q^m}$  is a subspace of  $(F_{q^m})^n$ , and has two important associated subcodes: the subfield subcode and the trace subcode, both of which are in  $(F_q)^n$ . These subcodes can be used to measure the Galois variance of the original code. For example, it is already known that a code is Galois invariant if and only if its subfield and trace subcodes are equal. We will look at the particular case of  $\lambda$ -cyclic codes over  $F_{q^m}$  (where  $\lambda \in F_q^\times$ ), their images under the Frobenius automorphism, and their subfield and trace subcodes. In particular, we will determine all  $\lambda$ -cyclic codes  $C$  such that the vector space  $(F_{q^m})^n$  is a direct sum of the Galois images of  $C$ . (Received July 21, 2015)