

1074-16-279

Sergio R. López-Permouth (lopez@ohio.edu), Athens, OH 45701, and **Steve Szabo*** (steve.szabo@eku.edu), Richmond, KY 40475. *A matrix approach to Group Convolutional Codes.*

We generalize to group convolutional codes the matrix-based approach used by Gluesing-Luerssen and Schmale to study cyclic convolutional codes. We then use this approach to extend to this level the results on the existence of dual codes that were originally established by those authors in that context. Our group convolutional codes (and therefore also our cyclic convolutional codes) are part of a wider family than the one usually considered in the literature since we considering them as left ideals of a (sentence-ambient) twisted polynomial ring having, in addition to an automorphism σ , the action of a σ - derivation δ . So, in particular, our results are a generalization of Gluesing-Luerssen and Schmale's even in the context of cyclic convolutional codes. (Received August 23, 2011)