

Iterative decoding of skew cyclic codes

K. Epiphane Nouetowa

Univ Rennes, IRMAR

Skew cyclic codes are a subclass of linear codes containing the cyclic codes. These codes and their decoding algorithms have been the subject of several works. Recently, M. Bossert proposed an iterative decoding algorithm for binary cyclic codes using the minimum weight codewords of "dual" codes. Later, M. Bossert et al. extended that work to non-binary cyclic codes. The aim of this talk is to adapt these algorithms to skew cyclic codes using Euclidean duals.

The talk is organized as follows. In the first part, we recall the definition of skew cyclic codes and a characterization of their Euclidean duals. In the second part, we give our decoding strategy. In the last part, we initialize an analysis of the resulting iterative decoding algorithm and provide a condition under which the algorithm always fails.