

Abstract

The Bose-Chaudhuri-Hocquenghem (BCH) codes are a well-studied subclass of cyclic codes that have found numerous applications in error correction and notably in quantum information processing. In this talk we aim to study some of the codes within this class and specifically narrow-sense antiprimitive BCH codes (these codes are also linear complementary duals (LCD) codes that have interesting practical recent applications in cryptography, among other benefits). We shall use tools and combine arguments from algebraic coding theory, combinatorial designs, and group theory to investigate narrow-sense antiprimitive BCH Codes and extend results from the recent literature. The BCH codes proposed in this talk are good candidates for permutation decoding, as they have a relatively large group of automorphisms.