
AARON DWYER, Carleton University

Perfect Codes in the Lee Scheme

The theory of error correcting codes is well explored when we consider the distance between two codewords as the Hamming distance. A well known bound in the Hamming metric and its association scheme is the sphere packing bound. Codes that reach this bound are called perfect. All perfect codes in the Hamming scheme are already categorized. Codes defined over cyclic rings with the Lee distance have been less explored. The sphere packing bound and perfect codes can be defined in the Lee scheme. In this talk I aim to explore the basics of Lee codes, focusing on perfect codes, giving some examples and stating some key theorems.