Abstract

Splitter sets of finite groups can be applied to the limited magnitude error correcting codes related to flash memory storage. In this talk, we discuss the existence of nondegenerate perfect splitter sets in finite cyclic groups. Using cyclotomic polynomials, we obtain a necessary and sufficient condition for the existence of such splitter sets under the condition that the size of the multiplier set is a prime power. This yields a unified characterization of known results as well as several new existence results. Furthermore, the relation of the existence of perfect B[-(k-1),k+1](q) and B[-k,k](q) splitter sets and necessary and sufficient conditions for the existence of perfect B[-1,6](q) splitter set are given.