Abstract

Binary self-dual codes and additive self-dual codes over GF(4) have in common interesting properties, for example, Type I, Type II, shadows, etc. Recently Bachoc and Gaborit introduced the notion of $s$-extremal codes for binary self-dual codes, generalizing Elkies’ study on the highest possible minimum weight of the shadow of binary self-dual codes. So it is natural to ask whether there can be a concept of $s$-extremal codes for additive self-dual codes over GF(4).

In this talk, we introduce a concept of $s$-extremal codes for additive self-dual codes over GF(4), classify them up to minimum distance $d = 4$, and give possible lengths for which there exist $s$-extremal codes with $5 \leq d \leq 11$. 