Abstract

The parameters of a q-ary MDS self-dual codes are completely determined by its length. In this talk, we give a further study on the construction of MDS self-dual codes via generalized Reed-Solomon (GRS) codes and their extended codes. Firstly, we consider the evaluation set consists of two disjoint subsets, one of which is based on the trace function, the other one is a union of a subspace and its cosets. Secondly, we give a simple but useful lemma to ensure that the symmetric difference of two intersecting subsets of finite fields can be taken as the desired evaluation set. Finally, several new families of MDS self-dual codes are explicitly constructed.