## Abstract

The parameters of a q-ary *maximum distance separable* (MDS) Euclidean self-dual codes are completely determined by its length. In this talk, we consider the problem for which lengths a q-ary MDS Euclidean self-dual code exists. This problem is completely solved for the case where q is even. For q is odd, some q-ary MDS Euclidean self-dual codes were obtained in the literature. We construct six new classes of q-ary MDS Euclidean self-dual codes by using generalized Reed–Solomon (GRS) codes and extended GRS codes. Our results generalize and improve some previous work.