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*q*-Analog of Packing Designs

A  $P_q(t, k, n)$   $q$ -packing design is a selection of  $k$ -subspaces of  $\mathbb{F}_q^n$  such that each  $t$ -subspace is contained in at most one element of the collection. A successful approach adopted from the Kramer-Mesner-method of prescribing a group of automorphisms was applied by Kohnert and Kurz to construct some constant dimension codes with moderate parameters which arise by  $q$ -packing designs. In this talk we recall this approach and give a version of the Kramer-Mesner-method breaking the condition that the whole  $q$ -packing design must admit the prescribed group of automorphisms. Finally, we give some improvements on the size of  $P_2(2, 3, n)$   $q$ -packing designs.