

1164-05-132

Papa Amar Sissokho* (psissok@ilstu.edu), 402 Michael Ct., Normal, IL 61761. *On k -independent set of subspaces.*

Let \mathbb{F}_q^m denote the vector space of dimension m over the field \mathbb{F}_q . We define a k -independent set of subspaces (k -ISS) of \mathbb{F}_q^m to be a set \mathcal{S} of subspaces from \mathbb{F}_q^m such that $|\mathcal{S}| \geq k$ and any subset of k subspaces of \mathcal{S} is independent. A k -ISS is *maximal* if it is not contained in a larger k -ISS. We show that any k -ISS can be used to construct a mixed error-correcting code \mathcal{C} with minimum Hamming distance at least $k + 1$. Moreover, if a k -ISS is maximal, then the covering radius of \mathcal{C} is at most $k - 1$. Finally, we show that if certain conditions are satisfied, then \mathcal{C} is a mixed MDS code. (Received January 16, 2021)