Abstract

Large Constant Dimension Codes and Lexicodes

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Constant dimension codes, with a prescribed distance, have found recently an application in network coding. All the codewords in such a code are subspaces with a given dimension. A computer search for large constant dimension codes is extremely inefficient since the search space domain is extremely large. Even so, we found that some constant dimension lexicodes are larger than other known codes. It appears that some of these large codes have a nice mathematical structure. It suggests a new method to construct large constant dimension codes. Some interesting questions concerning constant dimension lexicodes arise from our discussion. In this context we present a formula for the computation of the distance between two subspaces not necessarily of the same dimension.