Abstract

Subspace codes, especially constant dimension subspace codes (CDCs), represent an in triguing domain that can be used to conduct basic coding theory investigations. They have received widespread attention due to their applications in random network coding. This paper presents inverse bilateral multilevel construction by introducing inverse bilateral identifying vectors and inverse bilateral Ferrers diagram rank-metric codes. By inserting the inverse bilateral multilevel construction into the double multilevel construction and bilateral multilevel construction, an effective construction for CDCs is provided. Furthermore, via providing a new set of bilateral identifying vectors, we give another efficient construction for CDCs. In this article, several CDCs are exhibited, equipped with the rank-metric, with larger sizes than the known ones in the existing literature. From a practical standpoint, our results could help in the pragmatic framework of constant-dimension-lifted rank-metric codes for applications in network coding.