CONSTRUCTION OF MUTUALLY UNBIASED MAXIMALLY ENTANGLED BASES IN $C^3 \otimes C^{12}$ FROM $C^3 \otimes C^3$

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Abstract: In this paper, we first investigate two pairs of mutually unbiased maximally entangled bases in bipartite systems $C^3 \otimes C^3$. According to the mutually unbiased property of maximally entangled bases, we simplify the mutually unbiased problem to the choice of the unitary transformation matrix in C^3 and there are many unitary matrixes to be selected. Then we present more pairs maximally entangled bases in $C^3 \otimes C^{12}$ from that of $C^3 \otimes C^3$.

Keywords: Mutually unbiased bases; maximally entangled state; maximally entangled basis.