

Quantum Physics

Optimal Nonadditive Quantum Error-Detecting Code

Wen-Tai Yen, Li-Yi Hsu

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In this paper, we investigate the optimal nonadditive quantum error-detecting codes with distance two. The numerical simulation shows that, with n being can be 5, 6, 7, 8, 10 and 12, such the n -qubit quantum error-detecting codes with maximal number of codewords can be found. Therein, except the $n=7$ case, the n -vertex loop graphs help find the optimal quantum codes.

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