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Quantum Fisher Information of Bound Entangled W-Like States

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Abstract : Quantum Fisher information (QFI) is a multipartite entanglement witness and recently it has been studied extensively with separability and entanglement in the focus. On the other hand, bound entanglement is a special phenomena observed in mixed entangled states. In this work, we study the QFI of W states under a four-dimensional entanglement binding channel. Starting with initally pure W states of several qubits, we find how the QFI decreases as two qubits of the W state is subject to entanglement binding. We also show that as the size of the W state increases, the effect of entanglement binding is decreased.

Keywords : Quantum Fisher information, W states, bound entanglement, entanglement binding
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