Title:	Tight upper bound for the maximal expectation value of the Mermin operators
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Abstract:	The violation of the Mermin inequality (MI) for multipartite quantum states guarantees the existence of nonlocality between either few or all parties. The detection of optimal MI violation is fundamentally important, but current methods only involve numerical optimizations, and thus hard to find even for three-qubit states. In this paper, we provide a simple and elegant analytical method to achieve the upper bound of Mermin operator for arbitrary three-qubit states. Also, the necessary and sufficient conditions for the tightness of the bound for some class of tripartite states have been stated. Finally, we suggest an extension of this result for up to n-qubits.
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