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Title:	Experimentally identifying the entanglement class of pure tripartite states
Authors:	Singh, Amandeep (/jspui/browse?type=author&value=Singh%2C+Amandeep) Dorai, K. (/jspui/browse?type=author&value=Dorai%2C+K.) Arvind (/jspui/browse?type=author&value=Arvind)
Keywords:	tripartite states class entanglement Experimentally
Issue Date:	2018
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Abstract:	We use concurrence as an entanglement measure and experimentally demonstrate the entanglement classification of arbitrary three-qubit pure states on a nuclear magnetic resonance quantum information processor. Computing the concurrence experimentally under three different bipartitions, for an arbitrary three-qubit pure state, reveals the entanglement class of the state. The experiment involves measuring the expectation values of Pauli operators. This was achieved by mapping the desired expectation values onto the local z magnetization of a single qubit. We tested the entanglement classification protocol on twenty-seven different generic states and successfully detected their entanglement class. Full quantum state tomography was performed to construct experimental tomographs of each state and negativity was calculated from them, to validate the experimental results.
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