Title:	Implementation of the quantum Fourier transform on a hybrid qubit-qutrit NMR quantum emulator
Authors:	Dogra, S. (/jspui/browse?type=author&value=Dogra%2C+S.) Dorai, A. (/jspui/browse?type=author&value=Dorai%2C+A.) Dorai, K. (/jspui/browse?type=author&value=Dorai%2C+K.)
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Abstract:	The quantum Fourier transform (QFT) is a key ingredient of several quantum algorithms and a qudit-specific implementation of the QFT is hence an important step toward the realization of qudit-based quantum computers. This work develops a circuit decomposition of the QFT for hybrid qudits based on generalized Hadamard and generalized controlled-phase gates, which can be implemented using selective rotations in NMR. We experimentally implement the hybrid qudit QFT on an NMR quantum emulator, which uses four qubits to emulate a single qutrit coupled to two qubits.
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