Title:	Experimental demonstration of selective quantum process tomography on an NMR quantum information processor
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Keywords:	Quantum efficiency Quantum theory Experimental demonstrations NMR measurements
Issue Date:	2018
Publisher:	American Physical Society
Citation:	Physical Review A, 97(2)
Abstract:	We present the NMR implementation of a scheme for selective and efficient quantum process tomography without ancilla. We generalize this scheme such that it can be implemented efficiently using only a set of measurements involving product operators. The method allows us to estimate any element of the quantum process matrix to a desired precision, provided a set of quantum states can be prepared efficiently. Our modified technique requires fewer experimental resources as compared to the standard implementation of selective and efficient quantum process tomography, as it exploits the special nature of NMR measurements to allow us to compute specific elements of the process matrix by a restrictive set of subsystem measurements. To demonstrate the efficacy of our scheme, we experimentally tomograph the processes corresponding to "no operation," a controlled-NOT (CNOT), and a controlled-Hadamard gate on a two-qubit NMR quantum information processor, with high fidelities.
Description:	Only IISERM authors are available in the record.
URI:	https://journals.aps.org/pra/abstract/10.1103/PhysRevA.97.022311 (https://journals.aps.org/pra/abstract/10.1103/PhysRevA.97.022311) http://hdl.handle.net/123456789/2143 (http://hdl.handle.net/123456789/2143)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

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