

Personal Information

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Education

Ph.D. in Physics with Honors, 2007
University of New Mexico, Albuquerque, NM

B.S. in Physics with Honors, 2001
California Institute of Technology, Pasadena, CA

Current Research Interests

- State distillation
- Quantum discord
- Passive quantum error correction
- Classical simulation of quantum systems
- Surface codes
- Quantum computing with unverified ancillae
- Low-density parity-check codes
- Minimal quantum gate sets

Academic Positions

2007- National Institute of Standards and Technology, Postdoctoral Fellow

Recent Honors and Awards

2007 National Research Council Postdoctoral Research Associateship (NRC Fellowship)
2006 Regents Graduate Fellowship (Teaching/Research Award)
2005 East Asian and Pacific Summer Internship, Chinese Division (NSF Fellowship)
2003 Comprehensive Examination, Pass with Honors
2003 QuaCGR Fellow (ARO/ARDA Quantum Computing Fellowship)
2002 William G. Larsen, Ph.D., Memorial Award (TA Teaching Award)
2001 Bibi Jentoft-Nilsen Memorial Award (Leadership Award)

Publications

7: Bryan Eastin, *Simulating Concordant Computations Composed of Two-qubit Gates*, in preparation.

- 6: Bryan Eastin and Emanuel Knill, *Restrictions on Transversal Encoded Quantum Gate Sets*, arXiv:0811.4262, Phys. Rev. Lett. 102, 110502 (2009).
- 5: Matthew B. Elliott, Bryan Eastin, and Carlton M. Caves, *Graphical description of Pauli measurements on stabilizer states*, arXiv:0806.2651, accepted for publication in J. Phys. A.
- 4: Matthew B. Elliott, Bryan Eastin, and Carlton M. Caves, *Graphical description of the action of Clifford operators on stabilizer states*, quant-ph/0703278, Phys. Rev. A, 77, 042307 (2008).
- 3: Bryan Eastin, *Fault-Tolerant Thresholds for Encoded Ancillae with Homogeneous Errors*, quant-ph/0605192, Phys. Rev. A, 75, 022301 (2007).
- 2: Jonathan Barrett, Carlton M. Caves, Bryan Eastin, Matthew B. Elliott, and Stefano Pironio, *Modeling Pauli measurements on graph states with nearest-neighbor classical communication*, quant-ph/0603032, Phys. Rev. A, 75, 012103 (2007).
- 1: Tracey E. Tessier, Carlton M. Caves, Ivan H. Deutsch, Bryan Eastin, and Dave Bacon, *Optimal classical-communication-assisted local model of n -qubit Greenberger-Horne-Zeilinger correlations*, quant-ph/0503047, Phys. Rev. A, 72, 032305 (2005).

External Talks

2/2009	SQuInT 2009, <i>Restrictions on Transversal Encoded Quantum Gate Sets</i>
1/2009	QIP 2009, <i>Restrictions on Transversal Encoded Quantum Gate Sets</i>
3/2007	APS March Meeting 2007, <i>Making Moderately Large Ancillae</i>
2/2007	SQuInT 2007 Invited Tutorial, <i>Thresholds for Quantum Computation</i>
12/2006	PI Young Researchers Conference, <i>Ancillae with Homogeneous Errors</i>
11/2006	IQI Seminar, <i>Ancillae with Homogeneous Errors</i>
9/2006	Sandia Invited Talk, <i>Fault Tolerance and Thresholds</i>
2/2006	SQuInT 2006, <i>Threshold estimates for arbitrary error models</i>
11/2005	LANL Quantum Lunch Seminar, <i>Threshold Bounds for Steane Protocols</i>
8/2005	QuaCGR Talk, <i>Rules to be Broken</i>
5/2005	CAS 2005 Workshop, <i>Fault Tolerant Bounds</i>
5/2005	LANL Quantum Institute Workshop, <i>Symmetric Errors and Fault Tolerance</i>

Teaching Assistantships

Quantum Computation, spring 2006
 Quantum Information, fall 2005
 Graduate Electrodynamics, spring 2003
 Introductory Electromagnetism Lab, fall 2002
 Introductory Mechanics Lab, fall 2001, spring 2002, and fall 2002

Related Activities

In conjunction with Steven Flammia, I wrote Qcircuit, a macro package for typesetting quantum circuits in LaTeX, and the associated tutorial, quant-ph/0406003.

I referee articles for the following journals: Physical Review A, Physical Review Letters, and Quantum Information and Computation.