



Patrick Hayden

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Appointments

- 2013-** **Stanford University**
Professor of Physics
- 2010-** **Perimeter Institute for Theoretical Physics**
Distinguished Research Chair
- 2008-2013** **McGill University**
Associate Professor of Computer Science
Associate Member, Physics Department
- 2005-2013** **McGill University**
Canada Research Chair in the Physics of Information
- 2004-2008** **McGill University**
Assistant Professor of Computer Science
Associate Member, Physics Department
- 2001-2004** **California Institute of Technology**
Sherman Fairchild Prize Postdoctoral Fellow
- 1999-2000** **Exeter College, University of Oxford**
Tutor in Physics
- 1989-1995** **QNX Software Systems, Ltd.**
Software developer and architect

Education

- 1998-2001** **University of Oxford**
D. Phil. Physics (Rhodes Scholar)
Thesis: Distributing Quantum Information
Supervisor: Artur Ekert
- 1994-1998** **McGill University**
B. Sc. (Hon.) Mathematics and physics
Thesis: Symplectic Volumes of Spaces of Flat Connections
- 1989-1994** **Sir Robert Borden High School**
Valedictorian

Selected Honors and Awards

- Canadian Association of Computer Science
 - 2011 **Outstanding Young Computer Science Researcher Prize**
- Canadian Institute for Advanced Research
 - 2010- **Fellow of the Quantum Information Processing Program**
 - 2004-2009 **Scholar of the Quantum Information Processing Program**
- Alfred P. Sloan Foundation
 - 2007-2009 **Sloan Research Fellowship in Computer Science**
- University of Michigan Department of Electrical Engineering and Computer Science
 - 2006 **General Dynamics Distinguished Lecturer**
- Government of Canada
 - 2005- **Canada Research Chair in the Physics of Information**
- Los Alamos National Laboratory
 - 2004 **J. Robert Oppenheimer Fellowship** (Declined)
- California Institute of Technology
 - 2001-2004 **Sherman Fairchild Prize Fellowship**
- University of Oxford
 - 1998-2001 **Rhodes Scholarship**
- McGill University
 - 1998 **Anne Molson Gold Medal** (Highest standing in mathematics & physics)
 - 1998 **Horace Watson Medal and Prize** (Highest standing in physics)
 - 1997 **James Mathison Scholarship** (Academic standing in honours physics)
 - 1996 **Stuart Foster Prize** (Academic standing in physics)
 - 1994-1998 **Greville Smith Scholarship** (Tuition, expenses and stipend)
- For work at QNX software
 - 1996 **EDN Magazine Innovation of the Year Finalist**
 - 1995 **BYTE Magazine Editor's Award of Distinction**
 - 1995 **Paris Real-Time Systems Exhibition Prix Fournisseur**

Presentations

Public Lectures

- Perimeter Institute Public Lecturer
(One of six for 2009.) Waterloo, 2009
- Dawson College First Choice Lecturer Montreal, 2009
- Canadian Mathematical Society Public Lecturer
(One of two per year, one for each biannual meeting) Ottawa, 2008

Invited Conference Presentations

- CIFAR Quantum Information Processing Workshop
 - QStart at the Hebrew University
 - US-India Advanced Studies Institute on Thermalization
 - Theory Canada 8
 - Conference in Honour of John Preskill's 60th Birthday
 - Entangle This: Fields, Strings and Information
 - 6th Annual Conference on Information Theoretic Security
 - International Congress of Mathematical Physics
 - Quantum Information School
 - Relativistic Quantum Information
 - Bits, Branes and Black Holes
 - Operator Structures in Quantum Information III
 - International Congress of Industrial and Applied Mathematics
 - Holographic Cosmology II
 - Q. Info. in Quantum Gravity and Condensed Matter Physics
 - Quantum Information Processing
 - NATO Advanced School in Quantum Information
 - Intl. Conf. on Quantum Information and Computation
 - Perspectives in High Dimensions
 - International Iran Summer School on Quantum Information
 - Random Matrices in Quantum Information
 - Sparse Random Structures
 - Operator Structures in Quantum Information
 - American Mathematical Society Winter Meeting
 - Black Holes and Quantum Physics
 - Quantum Theory and Symmetries 6
 - Quantum Information Processing
 - 24th Texas Symposium on Astrophysics
 - CERN Black Hole Institute
 - Bellairs Workshop on Logic, Physics and Information
 - Gordon Research Conference on Quantum Information
 - IEEE Information Theory Workshop
 - Southwest Quantum Information (SQuInT) Conference
 - LANL Classical and Quantum Information Workshop
 - Quantum Information Theory in Quantum Gravity
 - QuantumWorks Annual Meeting
 - 28th Conference on Quantum Probability and Related Topics
 - Randomization of Quantum Systems
 - Dept. of Combinatorics and Optimization 40th Anniversary
 - Operator Structures in Quantum Information
 - Workshop on Quantum Cryptography and Computing
 - International Congress of Mathematical Physics
 - Symposium on Mathematical Physics
 - Benasque Center Quantum Information Workshop
 - CMS June Meeting
 - APS March Meeting
 - Quantum Information Processing
 - CIFAR Quantum Information Processing Workshop
- Sherbrooke, 2013
 - Jerusalem, 2013
 - Bangalore, 2013
 - Sherbrooke, 2013
 - Pasadena, 2013
 - Madrid, 2012
 - Montreal, 2012
 - Aalborg, 2012
 - Capetown, 2012
 - Perimeter Institute, 2012
 - Santa Barbara, 2012
 - Banff, 2012
 - Vancouver, 2011
 - Perimeter Institute, 2011
 - Aspen, 2011
 - Singapore, 2011
 - Montreal, 2010
 - Stockholm, 2010
 - Cleveland, 2010
 - Kish Island, Iran, 2010
 - Perimeter Institute, 2010
 - BIRS, Banff, 2010
 - Fields Institute, 2009
 - Washington, DC, 2009
 - Perimeter Institute, 2009
 - Lexington, KY, 2009
 - Delhi, 2008
 - Vancouver, 2008
 - Geneva, 2008
 - Barbados, 2008
 - Montana, 2008
 - Porto, 2008
 - Santa Fe, 2008
 - Santa Fe, 2008
 - Perimeter Institute, 2007
 - Calgary, 2007
 - Guanajuato, 2007
 - Waterloo, 2007
 - Waterloo, 2007
 - BIRS, Banff, 2007
 - Fields Institute, 2006
 - Rio de Janeiro, 2006
 - Torun, Poland, 2006
 - Benasque, Spain, 2005
 - Waterloo, 2005
 - Los Angeles, 2005
 - Boston, 2005
 - Montebello, QC, 2004

- Quantum Communication, Measurement and Computing Glasgow, UK, 2004
- ERATO Conference on Quantum Information Theory Kyoto, Japan, 2003
- Quantum Information Processing Berkeley, 2002
- MSRI Workshop on Quantum Information Theory Berkeley, 2002
- AMS Fall Meeting, Quantum Information Session Boston, 2002
- AMS Winter Meeting, Quantum Information Session San Diego, 2002
- Quantum Foundations in Light of Quantum Information Montreal, 2002
- IEE Meeting on Nanotechnology and Quantum Computing Winchester, UK, 2000
- Quantum Foundations in Light of Quantum Information Montreal, 2000
- Quantum Communication, Measurement and Computing Capri, Italy, 2000
- Quantum Algorithms and Information Processing Workshop Amsterdam, 2000

Selected Contributed Conference Presentations: (*) indicates delivery by co-author

- IEEE Conference on Computational Complexity: CCC (*) Palo Alto, 2013
- Quantum Information Processing: QIP ("featured" talk) Beijing, 2013
- Quantum Information Processing (*) ("featured" talk) Montreal, 2012
- ACM Symposium on Theory of Computing: STOC (*) San Jose, CA, 2011
- Quantum Information Processing (*) (promoted to "invited") Singapore, 2011
- Quantum Information Processing (*) Santa Fe, 2009
- Quantum Information Processing Paris, 2006
- Quantum Information Processing IBM Yorktown, 2003

Seminars and Colloquia

- Brandeis University, *Physics Colloquium* (2012)
- Brandeis University, *Information Systems Seminar* (2012)
- Caltech, *Institute for Quantum Information Seminar* (2011, 2002, 2001)
- Caltech, *Information Science and Technology Seminar* (2004)
- Cambridge University, *Centre for Quantum Computation Seminar* (2006)
- Centre de Recherches Mathematiques, *Mathematical Physics Seminar* (2012)
- ETH Zurich, *Physics Colloquium* (2013)
- IBM Research, *Physics of Information Seminar* (2003, 2002, 2000)
- Los Alamos National Lab, *Quantum Lunch* (2002, 2001, 2000)
- McGill University, *Physics Colloquium* (2006), *High Energy Physics Seminar* (2008)
- McGill University, *Centre for Nonlinear Dynamics in Physiology and Medicine Seminar* (2005)
- McGill University, *Computer Science Colloquium* (2004, 2001)
- MIT, *Quantum Information Seminar* (2012, 2011, 2007, 2005, 2002)
- MIT, *Harvard-MIT String Theory Seminar* (2012)
- Mittag-Leffler Institute, *Seminar* (2010)
- National University of Singapore, *Centre for Quantum Technologies Colloquium* (2009)
- Ohio State University, *Physics Colloquium* (2010)
- Perimeter Institute, *Various Seminar Series* (2010, 2007, 2006, 2003)
- Queen's University, *Mathematics Colloquium* (2007)
- Rutgers University, *High-Energy Theory Seminar* (2008)
- Stanford University, *Institute for Theoretical Physics Seminar* (2013, 2011, 2008)
- UC Berkeley, *String Theory Seminar* (2012)
- UC Berkeley, *Theoretical Computer Science Seminar* (2011)
- UC Berkeley, *Physics Colloquium* (2009)

- UC Berkeley, *Quantum Information Seminar* (2002)
- University of Bristol, *Quantum Information Seminar* (2006, 2002)
- University of British Columbia, *Quantum Information Seminar* (2011)
- University of Calgary, *Institute for Quantum Information Science Seminar* (2007)
- University of Michigan, *General Dynamics Distinguished Lecture Series* (2006)
- University of New Mexico, *Center for Advanced Studies Seminar* (2007, 2000)
- University of Ottawa, *Mathematics Colloquium* (2009)
- University of Sherbrooke, *Condensed Matter Seminar* (2007)
- University of Southern California, *Communication Sciences Institute Seminar* (2005)
- University of Toronto, *Mathematics Colloquium* (2010)
- University of Toronto, *Quantum Information Seminar* (2012, 2007, 2003)
- University of Washington, *Theoretical Computer Science Seminar* (2011)
- University of Waterloo, *Institute for Quantum Computing Colloquium* (2010, 2001)
- York University, *Physics Colloquium* (2005, 2013)

Publications

Popular articles

- Patrick Hayden. Entanglement as elbow grease. *Nature*. 474:41-42, 2011.
- Patrick Hayden. Putting certainty in the bank. *Nature* 436:633-634, 2005.

Refereed journal articles (published and in press)

- Patrick Hayden, Kevin Milner and Mark Wilde. Two-message quantum interactive proofs and the quantum separability problem. arXiv:1211.6120, 2012. To appear in *Quantum Information and Computation*.
- Omar Fawzi, Patrick Hayden and Pranab Sen. From low-distortion norm embeddings to explicit uncertainty relations and efficient information locking. To appear in *Journal of the ACM*.
- Nicolas Dutil and Patrick Hayden. One-shot multiparty state merging. To appear in *IEEE Transactions on Information Theory*.
- Daniel Harlow and Patrick Hayden. Quantum computation versus firewalls. *Journal of High Energy Physics (JHEP)* 2013:85, 2013.
- Frederic Dupuis, Jan Florjanczyk, Patrick Hayden and Debbie Leung. The locking-decoding frontier for generic dynamics. *Proceedings of the Royal Society: Series A* 469:2159, 2013.
- Nima Lashkari, Douglas Stanford, Matthew Hastings, Tobias Osborne and Patrick Hayden. Towards the fast scrambling conjecture. *Journal of High Energy Physics (JHEP)* 2013:22, 2013.
- Patrick Hayden, Matthew Headrick and Alex Maloney. Holographic mutual information is monogamous. *Physical Review D* 87:046003, 2013.
- Mark Wilde, Patrick Hayden and Saikat Guha. Quantum trade-off coding for bosonic communication. *Physical Review A* 86:062306, 2012.

- Mark Wilde, Patrick Hayden, Francesco Buscemi and Min-Hsiu Hsieh. The information-theoretic costs of simulating quantum measurements. *Journal of Physics A: Mathematical and General*, 45:453001, 2012.
- Mark Wilde, Patrick Hayden and Saikat Guha. Information trade-offs for optical quantum communication. *Physical Review Letters*. 108:140501, 2012.
- Omar Fawzi, Patrick Hayden, Ivan Savov, Pranab Sen and Mark Wilde. Classical communication over a quantum interference channel. *IEEE Transactions on Information Theory*. 58(6):3670-3691, 2012.
- Paul Best, Marco Gualtieri and Patrick Hayden. Orbits of the centralizer of a linear operator. *Journal of Lie Theory*. 22(4):1039-1048, 2012.
- Patrick Hayden and Andreas Winter. Weak decoupling duality and quantum identification. *IEEE Transactions on Information Theory*. 58(7):4914-4929, 2012.
- Kamil Bradler, Patrick Hayden and Prakash Panangaden. Quantum communication in Rindler spacetime. *Communications of Mathematical Physics*. 312(2):361-398, 2012.
- Jon Yard, Patrick Hayden, Igor Devetak. Quantum broadcast channels. *IEEE Transactions on Information Theory*. 57(10):7147-7162, 2011.
- Nicolas Dutil and Patrick Hayden. Assisted entanglement distillation. *Quantum information and computation*. 11:0496-0520, 2011.
- David Avis, Patrick Hayden and Mark Wilde. Leggett-Garg inequalities and the geometry of the cut polytope. *Physical Review A*, 82:030102, 2010.
- Kamil Bradler, Patrick Hayden, Dave Touchette and Mark Wilde. Trade-off capacities of the quantum Hadamard channels. *Physical Review A*, 81:062312, 2010.
- Kamil Bradler, Nicolas Dutil, Patrick Hayden and Abubakr Muhammad. Conjugate degradability and the quantum capacity of cloning channels. *Journal of Mathematical Physics*, 51:072201, 2010.
- Frédéric Dupuis and Patrick Hayden. A father protocol for quantum broadcast channels. *IEEE Transactions on Information Theory*, 56(6):2946-2956, 2010.
- Anura Abeyesinghe, Igor Devetak, Patrick Hayden and Andreas Winter. The mother of all protocols: Restructuring quantum information's family tree. *Proceedings of the Royal Society of London A*, 465(2108):2537-2563, 2009.
- Kamil Bradler, Patrick Hayden and Prakash Panangaden. Private information via the Unruh effect. *Journal of High Energy Physics (JHEP)*, 08(174), 2009.
- David Avis, Patrick Hayden and Ivan Savov. Distributed compression and multiparty squashed entanglement. *Journal of Physics A*, 41:115301, 2008.
- Jon Yard, Igor Devetak and Patrick Hayden. Capacity theorems for quantum multiple access channels - Classical-quantum and quantum-quantum capacity regions. *IEEE Transactions on Information Theory*, 54(7)3091-3113, 2008.
- Andreas Winter and Patrick Hayden. Counterexamples to the maximal p-norm multiplicativity conjecture for all $p > 1$. *Communications of Mathematical Physics*, 284(1):263-280, 2008.

- Cory Dean, Benjamin Piot, Patrick Hayden, Sankar Das Sarma, Guillaume Gervais, Loren Pfeiffer and Ken West. Contrasting behavior of the $5/2$ and $7/3$ fractional quantum Hall effect in a tilted field. *Physical Review Letters*, 101:186806, 2008.
- Harry Buhrman, Matthias Christandl, Patrick Hayden, Hoi-Kwong Lo and Stephanie Wehner. Possibility, impossibility, and cheat sensitivity of quantum-bit string commitment. *Physical Review A*, 78:022316, 2008.
- Cory Dean, Benjamin Piot, Patrick Hayden, Sankar Das Sarma, Guillaume Gervais, Loren Pfeiffer and Ken West. Intrinsic gap of the $\nu=5/2$ fractional quantum Hall state. *Physical Review Letters*, 100:146803, 2008.
- Patrick Hayden, Michal Horodecki, Andreas Winter and Jon Yard. A decoupling approach to the quantum capacity. *Open Systems and Information Dynamics*, 15:7-19, 2008.
- Patrick Hayden, Peter Shor and Andreas Winter. Random quantum codes from Gaussian ensembles and an uncertainty relation. *Open Systems and Information Dynamics*, 15:71-89, 2008.
- Patrick Hayden and John Preskill. Black holes as mirrors: Quantum information in random subsystems. *Journal of High Energy Physics (JHEP)*, 09:120, 2007.
- David Avis, Patrick Hayden and Ivan Savov. Distributed compression and multiparty squashed entanglement. *Journal of Physics A*, 41:115301, 2008.
- Harry Buhrman, Matthias Christandl, Patrick Hayden, Hoi-Kwong Lo and Stephanie Wehner. Security of quantum bit string commitment depends on the information measure. *Physical Review Letters*, 97:250501, 2006.
- Anura Abeyesinghe, Patrick Hayden, Graeme Smith and Andreas Winter. Optimal superdense coding of entangled states. *IEEE Transactions on Information Theory*, 52(8):3635-3641, 2006.
- Patrick Hayden, Debbie Leung and Andreas Winter. Aspects of generic entanglement. *Communications of Mathematical Physics*, 265(1)95-117, 2006.
- Charlene Ahn, Andrew Doherty, Patrick Hayden and Andreas Winter. On the distributed compression of quantum information. *IEEE Transactions on Information Theory*, 52(10):4349-4357, 2006.
- Stephen D. Bartlett, Patrick Hayden and Robert W. Spekkens. Random subspaces for encryption based on a private shared Cartesian frame. *Physical Review A*, 72:052329, 2005.
- Sumit Daftuar and Patrick Hayden. Quantum state manipulations and the Schubert calculus. *Annals of Physics*, 315(1)80-122, 2005.
- Charles Bennett, Patrick Hayden, Debbie Leung, Peter Shor, and Andreas Winter. Remote preparation of quantum states. *IEEE Transactions on Information Theory*, 51(1)56-74, 2005.
- Patrick Hayden and Christopher King. Correcting quantum channels by measuring the environment. *Quantum Information and Computation*, 5(2)156-160, 2005.
- Patrick Hayden, Debbie Leung and Graeme Smith. Multiparty data hiding of quantum information. *Physical Review A*, 71:062339, 2005.
- Aram Harrow, Patrick Hayden and Debbie Leung. Superdense coding of quantum states. *Physical Review Letters*, 92:187901, 2004.

- Patrick Hayden, Debbie Leung, Peter Shor, and Andreas Winter. Randomizing quantum states: Constructions and applications. *Communications of Mathematical Physics*, 250(2):371-391, 2004.
- Patrick Hayden, Richard Jozsa, Denes Petz and Andreas Winter. Conditions for equality in the strong subadditivity inequality for quantum entropy. *Communications of Mathematical Physics*, 246(2):359-374, 2004.
- Anura Abeyesinghe and Patrick Hayden. Generalized remote state preparation: Trading cbits, qubits and ebits in quantum communication. *Physical Review A*, 68:062319, 2003.
- David D. DiVincenzo, Patrick Hayden and Barbara M. Terhal. Hiding quantum data. *Foundations of Physics*, 33(11):1629-164, 2003.
- Wim van Dam and Patrick Hayden. Embezzling entangled quantum states (Universal entanglement transformations without communication). *Physical Review A*, 67:060302, 2003.
- Patrick Hayden and Andreas Winter. On the communication cost of entanglement transformations. *Physical Review A*, 67:012326, 2003.
- Patrick Hayden, Richard Jozsa and Andreas Winter. Trading quantum and classical resources in quantum data compression. *Journal of Mathematical Physics*, 43(9):4404-4444, 2002.
- Howard Barnum, Patrick Hayden, Richard Jozsa and Andreas Winter. On the reversible extraction of information from a quantum source. *Proceedings of the Royal Society of London A*, 457(2012):2019-2039, 2001.
- Simon C. Benjamin and Patrick Hayden. Comment on "Quantum games and quantum strategies". *Physical Review Letters*, 87:069801, 2001.
- Simon C. Benjamin and Patrick Hayden. Multiplayer quantum games. *Physical Review A*, 64:030301, 2001.
- Artur Ekert, Patrick Hayden, Hitoshi Inamori, and Daniel Oi. What is quantum computation? *International Journal of Modern Physics A*, 16(20):3335-3363, 2001.
- Patrick Hayden, Michal Horodecki, and Barbara M. Terhal. The asymptotic entanglement cost of preparing a quantum state. *Journal of Physics A*, 34(35):6891-6898, 2001.
- David Deutsch and Patrick Hayden. Information flow in entangled quantum systems. *Proceedings of the Royal Society of London A*, 456(1999):1759-1774, 2000.
- Artur Ekert, Marie Ericsson, Patrick Hayden, Hitoshi Inamori, Jonathan Jones, Daniel Oi, and Vlatko Vedral. Geometric quantum computation. *Journal of Modern Optics*, 47(14/15):2501-2513, 2000.

Refereed conference proceedings

- Mark Wilde, Olivier Landon-Cardinal and Patrick Hayden. Towards efficient decoding of classical-quantum polar codes. To appear in Proceedings of the 8th Conference on Theory of Quantum Computation, Communication and Cryptography (TQC), 2013.
- Patrick Hayden, Kevin Milner and Mark Wilde. Two-message quantum interactive proofs and the quantum separability problem. *Proceedings of the IEEE Conference on Computational Complexity (CCC)*, pp. 156-167, 2013.

- Omar Fawzi, Patrick Hayden, Ivan Savov, Pranab Sen and Mark Wilde. Quantum interference channels. *Proceedings of the 49th Allerton Conference on Communication, Control, and Computing*, IEEE, pp. 609-616, 2011.
- Omar Fawzi, Patrick Hayden and Pranab Sen. From low-distortion embeddings to explicit uncertainty relations and efficient information locking. *Proceedings of the 43rd ACM Symposium on Theory of Computing (STOC 2011)*, ACM, pp. 773-782, 2011.
- Patrick Hayden. Concentration of measure effects in quantum information. In *Quantum Information Science and its Contributions to Mathematics, Proceedings of Symposia in Applied Mathematics*, vol. 68. American Mathematical Society, pp. 3-12, 2010.
- David Avis, Patrick Hayden and Ivan Savov. Multiparty distributed compression of quantum information. In *Proceedings of the Second International Conference on Quantum, Nano and Micro Technologies*. IEEE, 2008. (Best paper award.)
- Jon Yard, Patrick Hayden and Igor Devetak. Quantum broadcast channels. In *Proceedings of the ERATO Conference on Quantum Information Science, Tokyo, Japan, 2005*.
- Jon Yard, Igor Devetak, Patrick Hayden. Capacity theorems for quantum multiple access channels In *Proceedings of the 2005 IEEE Symposium on Information Theory, Adelaide, Australia*, pp. 884-888, 2005.
- Jon Yard, Igor Devetak, Patrick Hayden. Sending classical and quantum information over quantum multiple access channels. In *Proceedings of the ninth Canadian Workshop on Information Theory, Montreal, Canada*. pp. 387-390, 2005.
- Patrick Hayden. Entanglement in random subspaces. In *Proceedings of the Seventh International Conference on Quantum Communication, Measurement and Computing*. American Institute of Physics. pp. 226-229, 2004.
- Artur Ekert, Patrick Hayden, and Hitoshi Inamori. Basic concepts in quantum computation. In R. Kaiser, C. Westbrook, and F. David, editors, *Proceedings of the 1999 Les Houches summer school on "Coherent Matter Waves"*, volume 72, pp. 661-703, 2001.

Refereed book chapters

- P. Hayden. Capacities enhanced by entanglement. In *Encyclopedia of Mathematical Physics*, eds. J.-P. Francoise, G.L. Naber and S.T. Tsou, pp. 418-424. Elsevier, 2006.

Preprints on arXiv.org

- Kevin Milner, Gus Gutoski, Patrick Hayden and Mark Wilde. Quantum interactive proofs and the complexity of entanglement detection. arXiv:1308.5788, 2013. Submitted to *Theory of Computing*.
- Saikat Guha, Patrick Hayden, Hari Krovi, Seth Lloyd, Cosmo Lupo, Jeffrey Shapiro, Masahiro Takeoka and Mark Wilde. Quantum enigma machines and the locking capacity of a quantum channel. arXiv:1307.5368, 2013. Submitted to *Physical Review X*.
- Patrick Hayden and Alex May. Summoning information in spacetime, or where and when can a qubit be?, arXiv:1210.0913, 2012. Submitted to *Physical Review Letters*.
- Patrick Hayden. The maximal p -norm multiplicativity conjecture is false. arXiv:0707.3291, 2007.

- Robin Blume-Kohout and Patrick Hayden. Accurate quantum state estimation via “Keeping the experimentalist honest.” arXiv:quant-ph/0603116, 2006.
- Wim van Dam and Patrick Hayden. Renyi-entropic bounds on quantum communication. arXiv:quant-ph/0204093, 2002.
- Patrick Hayden, Barbara M. Terhal, and Armin Uhlmann. On the LOCC classification of bipartite density matrices. arXiv:quant-ph/0011095, 2000.

Patents

- Patrick M. Hayden and Robin Burgener. Window Kernel. United States Patent 5,745,759. Granted April 28, 1998.