
CURRICULUM VITAE

Jens Eisert

Professor of Theoretical Physics

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Freie Universität Berlin

Arnimallee 14

14195 Berlin

PERSONAL DETAILS

- **Date of birth:** 9th of October 1970
- **Nationalities:** German and Swedish
- **Marital status:** Married, one child

ACADEMIC APPOINTMENTS

05/11-	Full professor , Dahlem Center for Complex Quantum Systems, Freie Universität Berlin
08/19-	Group leader , Quantum Computing and Simulation, Helmholtz Center Berlin
11/21-	Group leader , Quantum Machine Learning, Fraunhofer Heinrich Hertz Institute Berlin
10/09-09/10	Fellow at the Institute for Advanced Study Berlin (Wissenschaftskolleg)
05/08-04/11	Full professor , University of Potsdam
03/05-05/08	Lecturer (permanent), Institute for Mathematical Sciences, Imperial College London
12/02-03/05	Junior professor , Quantum Optics and Quantum Information, University of Potsdam
12/02-01/03	Visiting scholar , IQI, California Institute of Technology
07/01-11/02	Feodor Lynen Fellow of the Alexander von Humboldt Foundation , Imperial College London
02/01-07/01	Postdoctoral researcher in QOLS, Imperial College London , supported by the EU

RESEARCH

Research interests: Quantum information theory, quantum many-body theory

- Quantum computing and simulation
- Quantum information theory
- Complex quantum systems
- Machine learning
- Quantum systems identification

Research talks:

- **>1000 invited talks** at workshops, conferences, and in colloquia

Publications:

- **410** scientific publications, of which
- **108** published in **PRL**, **PRX (Quantum)** or **RMP**
- **42** published in the **Nature** and **Science** groups
- **5** in the **Commun. Math. Phys.**

Citations:

- **27,516 citations** according to Web of Science (WoS)
- **50,594 citations** according to Google Scholar (GS)
- **h-index 110** (GS), 77 (WoS)

AWARDS AND PRIZES

- **ERC Advanced Grant** of the European Research Council, 2023
- **Google NISQ Award**, 2019
- **ERC Consolidator Grant** of the European Research Council, 2012
- **Institute for Advanced Study Berlin** Fellow, 2010-2011
- **European Research Young Investigator** (EURYI) Award, 2004
- **Feodor Lynen** Scholarship of the **Alexander von Humboldt Foundation**, 2001
- **Michelson Prize**, 1998
- **Sigma Pi Sigma Honour Society Award**, 1995
- **J. W. Fulbright** Scholarship, 1994
- Named among the **Top 100** researchers of Berlin, Tagesspiegel, 2023

PHD

04/98-01/01	PhD , University of Potsdam , thesis advisor M. Wilkens “ <i>Entanglement in Quantum Information Theory</i> ” Final grade: Summa cum laude
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EDUCATION

95-98, 91-94	Albert Ludwigs University Freiburg , studies in physics Degree: Diploma in Physics Final grade: Very good (very good) Topic of dissertation: “ <i>Quantum Brownian Motion: A Quantum Monte Carlo Approach</i> ”
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94–95	University of Connecticut , as a J. W. Fulbright Fellow Postgraduate studies in mathematics and physics Degree: Master of Science , GPA: 3.88 (4.0) Scientific work in applied mathematics/numerical analysis
81–90	Wilhelm-von-Humboldt-High-School , Ludwigshafen Degree: Abitur , average mark: 1.0 (1.0)

EDITORIAL BOARD MEMBERSHIPS AND SERVICES TO THE COMMUNITY

- **Quantum Software Alliance**, coauthor of the international strategic board on quantum software, 2025
- Substantial **outreach** in public talks, podcasts, and programmes in the public television and radio
- **Agenda on quantum computing of the German government**, co-author with I. Bloch and T. Calarco, 2020
- **Government consulting** on quantum technologies for the German government, 2019–
- **EU’s Strategic Research Agenda** on quantum technologies, co-author, 2019
- **Physical Review Letters**, divisional editor, 2017–2020
- **EU road map for quantum information science**, lead author of the quantum simulations section, 2016
- **Quantum**, advisory board member, 2016–
- **QUTEGA committee** planning the German part of the *EU Flagship for Quantum Technologies*, member, 2016
- **Quantum Science and Technologies**, editor, 2016–
- **Quantum Information and Computation**, editor, 2011–
- **Physical Review A**, divisional editor, 2008–2010
- **Journal of Physics A**, editor, 2012–2016
- **Quantum Information Processing**, editor, 2012–2016
- **2010 EU road map for quantum information science**, co-author and lead theory editor, 2010

ORGANISATIONAL SKILLS

- **Grand Challenge Conference**, in charge of the quantum part of the conference of the Berlin University Alliance 2026
- **Berlin University Alliance**, contributing to Berlin’s excellence project, 2025–
- **QCTiP 2025**, Quantum Computing Theory in Practice, main international conference, head of the local organization committee
- **Berlin Quantum**, founding board member and co-speaker of Berlin Quantum, the quantum initiative of the state of Berlin, 2023–
- **Einstein Research Unit**, Perspectives of a quantum digital transformation: Near-term quantum computational devices and quantum processors on near-term quantum computing, project coordinator of a project within the Berlin University Alliance of the German Excellence Initiative, involving 19 PIs, December 2020–December 2024
- **FOR 2724**, project leader of a DFG Research Unit on quantum thermodynamics, January 2019–
- **TQC 2016**, head organizer, major conference on quantum information, September 2016
- **Subproject leader** in EU projects QAP and QESSENCE
- **COST Action MP1209** “Thermodynamics in the Quantum Regime”, co-author and working group leader, 2012
- **COST-Conference**, first COST conference on quantum thermodynamics held in Potsdam, January 2014
- **QQQ-Meeting**, regular meeting in the Berlin-Potsdam academic landscape on quantum information, quantum optics, and quantum many-body theory (organizer and co-founder), 2005–2011
- **Summer academy of the Studienstiftung des deutschen Volkes**, Görlitz 2008, course on quantum information theory, jointly with A. Rauschenbeutel, August 2008
- **PAQ07**, **head of local organizing committee**, major international conference on quantum optics and quantum information, Royal Society London, September 2007
- **Summer academy of the Studienstiftung des deutschen Volkes**, Rot an der Rot 2004, course on quantum information theory, jointly with R. F. Werner, August 2004
- **IQING 2002**, organizer of an international conference for PhD students and postdocs in quantum information
- **IQING 2001**, jointly with C. Simon (Oxford) and D. Jonathan (Cambridge), 2001
- **YAO ’99 – Young Atom Opticians**, jointly with T. Felbinger and C. Henkel (Potsdam), 1999
- **A2-Consortium For Quantum Information**, 1998 – 2001, 2003

GROUP LEADING SKILLS AND SUPPORT OF YOUNG SCIENTISTS

- **Diploma and MSc supervision:** (Present and past) J. Anders, B. Bach, I. Benthin, H. Bernigau, P. Fährmann, J. Frank, A. Friedenauer, M. Friesdorf, M. Gluza, M. Goihl, D. Gross, D. Hangleiter, M. von Hase, M. Herold, J. Hoersch, A. Kegeles, M. Kramer, S. Lahs, J. Lekscha, J. J. Meyer, A. Nietner, C. Prunkl, S. Rosset, A. Steffens, A. Studt, L. Trotta, C. Verheven, C. Wassner, F. Wilde, H. Wilming, J. Wilkens

- **PhD supervision:** (Present and past) G. Aguilar, S. Aimet, A. Bauer, C. Bertoni, P. Boes, F. G. S. L. Brandao (co-supervised with M. B. Plenio), A. Burchards, J. Conrad, M. Cramer, J. Denzler, P.-J. Derks, A. Feito (co-supervised with M. B. Plenio), P. Fährmann, M. Friesdorf, J. C. M. de la Fuente, J. Fiksa, J. Gertis, E. Gil-Fuster, M. Gluza, M. Goihl, C. Gogolin, D. Gross, F. Hahn, J. Haferkamp, D. Hangleiter, A. A. Mele, M. Hinsche, M. Ioannou, A. Jahn, M. Kesselring, K. Kielsing, J. Kitzinger, M. Kliesch, C. Krumnow, A. Mari, J. Meyer, D. Miller, J. Naumann, J. Nauth, A. Nietner, M. Ohliger, E. Onorati, I. Roth, A. Serafini (long term visitor), A. Steffens, R. Suzuki, A. Townsend-Teague, F. Wilde, C. Wille, H. Wilming, A. Wilms
- **Postdoctoral researchers:** (Present and past) T. Barthel, N. de Beaudrap, L. Bittel, J. Bermejo-Vega, C. Bravo-Prieto, O. Buerschaper, E. T. Campbell, C. Cao, M. Caro, J. Carrasco, M. Cramer, C. Dawson, E. Derbyshire, F. vom Ende, P. Faist, R. Gallego, D. Gross, T. Guaita, G. Guarinieri, R. Hübener, P. Hyllus, S. Khatir, R. Küng, V. Lahtinen, L. Leone, A. Lund, M. Müller, A. Nagy, V. Nesme, H. Pashayan, F. Pastawski, C. Pineda, J. Roffe, K. Pregnell (co-supervised with M. B. Plenio), Y. Quek, A. Quintavalle, A. Riera, C. Riofrio, J. Roffe, R. Schadow, P. Schmoll, N. Tarantino, N. Tischler, A. H. Werner, N. Walk, J. Wallnöfer, B. Wu, D. Yang, Z. Zimboras
- **Host of Humboldt Bessel Award winners and professors:** (Present and past) M. Aspelmeyer, T. Prosen, R. Sweke
- **Host of Humboldt/Marie-Skłodowska-Curie grants:** (Present and past) F. Arzani, L. Aolita, R. DiCandia, S. Campbell (shared with C. Koch), C. Cao, F. vom Ende, R. Gallego, F. Pastawski, M. J. Kastoryano, R. Laurenza, N. Ng, A. Pappa, Y. Quek, M. Schwarz, S. J. Thomson, N. Tischler, A. Streltsov, R. Sweke, N. Walk
- **Past group members in senior academic positions and permanent jobs in the quantum industry:** This research group, despite being a relatively young group, already has a long list of past group members who are now in **group leader positions in academia** or are **permanently employed as researchers** in the quantum industry. At least the **46 past group members** in the following list fairly qualify for this. This can be seen as an indication of taking academic support, coaching, mentoring and academic career planning very seriously.

David Gross (PhD student and Diploma student, now W3 professor at the University of Cologne), Martin Kliesch (PhD student and postdoc, now W3 professor at the University of Hamburg), Richard Kueng (postdoc, now professor at the Johannes Kepler University of Linz), Zoltan Zimboras (postdoc, now assistant professor at the Wigner Institute, Budapest), Alexander Streltsov (postdoc, now group leader at the University of Warsaw), Albert Werner (postdoc, now professor in Copenhagen), Dong Yang (postdoc, now assistant professor at the Jiliang University, China), Thomas Barthel (postdoc, now associate professor at Duke University), Earl Campbell (postdoc, now lecturer – assistant professor – at the University of Sheffield and team lead at Riverlane, Cambridge), Ryan Sweke (postdoc, now Humboldt professor in Stellenbosch, South Africa), Spyros Sotiriadis (postdoc, now assistant professor at the University of Crete, Greece), Alessio Serafini (long term visiting PhD student, now professor at University College London), Janet Anders (Diploma student, now W3 professor at the University of Potsdam), Michael Kastoryano, (postdoc, now assistant professor at the University of Copenhagen), Fernando Brandao (PhD student, joint supervision with Martin Plenio, now professor at the California Institute of Technology and quantum researcher at Amazon Quantum Solutions Lab, Pasadena), Niel de Beaudrap (postdoc, now lecturer – assistant professor – at the University of Sussex), Ingo Roth (PhD student, now lead scientist at the Technology Innovation Institute, Dubai), Markus Mueller (postdoc, now group leader – similar to assistant professor – at IQOQI, Vienna), Steven J. Thomson, (postdoc, now EPSRC Open Fellow at the University of Edinburgh), Giacomo Guarinieri (postdoc, now adjunct professor at the University of Padua), Leandro Aolita (postdoc and Marie-Skłodowska-Curie Fellow, now professor and executive director at the Quantum Research Center, Abu Dhabi), Augustine Kshetrimayum (postdoc, now assistant professor at the Saha Institute of Nuclear Physics, Kolkata), Arnau Riera (postdoc, now researcher at Qilimanjaro), Christian Gogolin (PhD student and postdoc, now quantum researcher at Covestro), Carlos Pineda (postdoc, now assistant professor at the Universidad Nacional Autonoma de Mexico), Fernando Pastawski (postdoc, now quantum researcher at Amazon Web Services), Konrad Kielsing (postdoc, PhD student and Diploma student, now quantum researcher at PsiQuantum), Mark Steudtner (postdoc, now quantum researcher at PsiQuantum), Juani Bermejo-Vega (postdoc, now group leader at the University of Granada), Christopher Dawson (postdoc, now quantum researcher at PsiQuantum), Anna Pappa (postdoc, now professor at TU Berlin), Nelly Ng (postdoc and Humboldt Fellow, now assistant professor at NTU Singapore), Marcus Cramer (PhD student, now quantum researcher at Q-CTRL), Christian Krumnow (PhD student and postdoc, now group and project leader at the University of Applied Sciences, Berlin), Winton Brown (postdoc, now quantum researcher at Northrop Grumman), Francesco Arzani (Marie Curie Fellow and postdoc, now group leader at Ecole Normale Supérieure), Andrea Mari (PhD student, now professor at the University of Camerino), Ji-Yao Chen (postdoc, now professor at Sun Yat-sen University), Nora Tischler (postdoc, now assistant professor at Griffith University), Matthias Caro (postdoc, now lecturer at Warwick University), Joschka Roffe (postdoc, now tenure track lecturer at the University of Edinburgh), Lorenzo Leone (postdoc, now with an accepted offer for assistant professorship at the University of Salerno) Adrian Perez-Salinas (postdoc, now with an accepted offer for an assistant professorship at the Universidad Complutense de Madrid), Seongwook Shin (postdoc, now with an accepted offer for an assistant professorship in Korea), Armanda Quintavalle (postdoc, now with an accepted offer for a permanent researcher position in the quantum industry), Alex Townsend-Teague (PhD student, now with an accepted offer for a permanent researcher position at Iceberg Quantum).

LIST OF PUBLICATIONS

Jens Eisert

Professor of Theoretical Physics

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This list comprises all those publications that have been published in

- *Communications in Mathematical Physics*
- *Communications Physics (Nature)*
- *Nature*
- *Nature Communications*
- *Nature Photonics*
- *Nature Physics*
- *Nature PJ Quantum Information*
- *Nature Reviews Physics*
- *Physical Review Letters*
- *Physical Review X*
- *PRX Quantum*
- *Proceedings of the National Academy of Sciences*
- *Reviews of Modern Physics*
- *Reports on Progress in Physics*
- *Science Advances*

- [1] “Entanglement theory with limited computational resources”,
L. Leone, J. Rizzo, J. Eisert, S. Jerbi,
Nature Physics **21**, 1847 (2025),
(Lanl e-print arXiv:2502.12284).
- [2] “Experimentally probing Landauer’s principle in the quantum many-body regime”,
S. Aimet, M. Tajik, G. Tournaire, P. Schüttelkopf, J. Sabino, S. Sotiriadis, G. Guarnieri, J. Schmiedmayer, J. Eisert,
Nature Physics **21**, 1326 (2025),
(Lanl e-print arXiv:2407.21690).
- [3] “Learning quantum states of continuous variable systems”,
F. Anna Mele, A. A. Mele, L. Bittel, J. Eisert, V. Giovannetti, L. Lami, L. Leone, S. F. E. Oliviero,
Nature Physics **21**, 2002 (2025),
(Lanl e-print arXiv:2405.01431).
- [4] “Noise-induced shallow circuits and absence of barren plateaus”,
A. A. Mele, A. Angrisani, S. Ghosh, S. Khatr, J. Eisert, D. Stilck Franca, Y. Quek,
Nature Physics **21**, in press (2025),
(Lanl e-print arXiv:2403.13927).
- [5] “Localized statistics decoding: A parallel decoding algorithm for quantum low-density parity-check codes”,
T. Hillmann, L. Berent, A. O. Quintavalle, J. Eisert, R. Wille, J. Roffe,
Nature Communications **16**, 8214 (2025),
(Lanl e-print arXiv:2406.18655).
- [6] “Verifiable measurement-based quantum random sampling with trapped ions”,
M. Ringbauer, M. Hinsche, T. Feldker, P. K. Faehrmann, J. Bermejo-Vega, C. Edmunds, L. Postler, R. Stricker, C. D. Marciniak, M. Meth, I. Pogorelov, R. Blatt, P. Schindler, J. Eisert, T. Monz, D. Hangleiter,
Nature Communications **16**, 106 (2025),
(Lanl e-print arXiv:2307.14424).
- [7] “Large-scale stochastic simulation of open quantum systems”,
A. Sander, M. Fröhlich, M. Eigel, J. Eisert, P. Gelß, M. Hintermüller, R. M. Milbradt, R. Wille, C. B. Mendl,
Nature Communications **16**, 11074 (2025),
(Lanl e-print arXiv:2501.17913).

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- [8] “Typical thermalization of low-entanglement states”,
C. Bertoni, C. Wassner, G. Guarnieri, J. Eisert,
Communications Physics (Nature) **8**, 301 (2025),
(Lanl e-print arXiv:2403.18007).
- [9] “In the shadow of the Hadamard test: Using the garbage state for good and further modifications”,
P. K. Faehrmann, J. Eisert, R. Kueng,
Physical Review Letters **135**, 150603 (2025),
(Lanl e-print arXiv:2505.15913).
- [10] “Optimal trace-distance bounds for free-fermionic states: Testing and improved tomography”,
L. Bittel, A. Anna Mele, J. Eisert, L. Leone,
PRX Quantum **6**, 030341 (2025),
(Lanl e-print arXiv:2409.17953).
- [11] “Efficient distributed inner product estimation via Pauli sampling”,
M. Hinsche, M. Ioannou, S. Jerbi, L. Leone, J. Eisert, J. Carrasco,
PRX Quantum **6**, 030354 (2025),
(Lanl e-print arXiv:2405.06544).
- [12] “Learning topological states from randomized measurements using variational tensor network tomography”,
Y. Teng, R. Samajdar, K. Van Kirk, F. Wilde, S. Sachdev, J. Eisert, R. Sweke, K. Najafi,
PRX Quantum **6**, 040303 (2025),
(Lanl e-print arXiv:2406.00193).
- [13] “Quantum metrology in the finite-sample regime”,
J. J. Meyer, S. Khatri, D. Stilck Franca, J. Eisert, P. Faist,
PRX Quantum **6**, 030336 (2025),
(Lanl e-print arXiv:2307.06370).
- [14] “Tomography of parametrized quantum states”,
F. J. Schreiber, J. Eisert, J. J. Meyer,
PRX Quantum **6**, 020346 (2025),
(Lanl e-print arXiv:2407.12916).
- [15] “Complexity-constrained quantum thermodynamics”,
A. Munson, N. B. T. Kothakonda, J. Haferkamp, N. Yunger Halpern, J. Eisert, P. Faist,
PRX Quantum **6**, 010346 (2025),
(Lanl e-print arXiv:2403.04828).
- [16] “The XYZ ruby code: Making a case for a three-colored graphical calculus for quantum error correction in spacetime”,
J. C. Magdalena de la Fuente, J. Old, A. Townsend-Teague, M. Rispler, J. Eisert, M. Müller,
PRX Quantum **6**, 010360 (2025),
(Lanl e-print arXiv:2407.08566).
- [17] “Optimal randomized measurements for a family of non-linear quantum properties”,
Z. Du, Y. Tang, A. Elben, I. Roth, J. Eisert, Z. Liu,
PRX Quantum **6**, in press (2025),
(Lanl e-print arXiv:2505.09206).
- [18] “Exponentially tighter bounds on limitations of quantum error mitigation”,
Y. Quek, D. Stilck Franca, S. Khatri, J. J. Meyer, J. Eisert,
Nature Physics **20**, 1648 (2024),
(Lanl e-print arXiv:2210.11505).

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- [19] “Unraveling long-time quantum dynamics using flow equations”,
S. J. Thomson, J. Eisert
Nature Physics **20**, 1401 (2024),
(Lanl e-print arXiv:2308.13005).
- [20] “Probing coherent quantum thermodynamics using a trapped ion”,
O. Onishchenko, G. Guarnieri, P. Rosillo-Rodes, D. Pijn, J. Hilder, U. G. Poschinger, M. Perarnau-Llobet, J. Eisert,
F. Schmidt-Kaler,
Nature Communications **15**, 6974 (2024),
(Lanl e-print arXiv:2207.14325).
- [21] “Towards provably efficient quantum algorithms for large-scale machine-learning models”,
J. Liu, M. Liu, J.-P. Liu, Z. Ye, Y. Alexeev, J. Eisert, L. Jiang,
Nature Communications **15**, 434 (2024),
(Lanl e-print arXiv:2301.06142).
- [22] “Understanding quantum machine learning also requires rethinking generalization”,
E. Gil-Fuster, J. Eisert, C. Bravo-Prieto,
Nature Communications **15**, 2277 (2024),
(Lanl e-print arXiv:2306.13461).
- [23] “Precise Hamiltonian identification of a superconducting quantum processor”,
D. Hangleiter, I. Roth, J. Eisert, P. Roushan,
Nature Communications **15**, 9595 (2024),
(Lanl e-print arXiv:2108.08319).
- [24] “A super-polynomial quantum advantage for combinatorial optimization problems”,
N. Pirnay, V. Ulitzsch, F. Wilde, J. Eisert, J.-P. Seifert,
Science Advances **10**, eadj5170 (2024),
(Lanl e-print arXiv:2212.08678).
- [25] “Measuring out quasi-local integrals of motion from entanglement”,
B. Lu, C. Bertoni, S. J. Thomson, J. Eisert,
Communications Physics **7**, 17 (2024),
(Lanl e-print arXiv:2301.01787).
- [26] “Hardware-tailored diagonalization circuits”,
D. Miller, L. E. Fischer, K. Levi, E. J. Kuehnke, I. O. Sokolov, P. Kl. Barkoutsos, J. Eisert, I. Tavernelli,
Nature PJ Quantum Information **10**, 122 (2024),
(Lanl e-print arXiv:2203.03646).
- [27] “(Semi-)device independently characterizing quantum temporal correlations”,
S.-L. Chen, J. Eisert,
Physical Review Letters **132**, 220201 (2024),
(Lanl e-print arXiv:2305.19548).
- [28] “Shallow shadows: Expectation estimation using low-depth random Clifford circuits”,
C. Bertoni, J. Haferkamp, M. Hinsche, M. Ioannou, J. Eisert, H. Pashayan,
Physical Review Letters **133**, 020602 (2024),
(Lanl e-print arXiv:2209.12924).
- [29] “Generalised linear response theory for the full quantum work statistics”,
G. Guarnieri, J. Eisert, H. J. D. Miller,
Physical Review Letters **133**, 070405 (2024),
(Lanl e-print arXiv:2307.01885).

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- [30] “Pseudomagic quantum states”,
A. Gu, L. Leone, S. Ghosh, J. Eisert, S. Yelin, Y. Quek,
Physical Review Letters **132**, 210602 (2024),
(Lanl e-print arXiv:2308.16228).
- [31] “The domain wall color code”,
K. Tiurev, A. Pesah, P.-J. H. S. Derks, J. Roffe, J. Eisert, M. S. Kesselring, J.-M. Reiner,
Physical Review Letters **133**, 110601 (2024),
(Lanl e-print arXiv:2307.00054).
- [32] “Learning fermionic correlations by evolving with random translationally invariant Hamiltonians”,
J. Denzler, A. Anna Mele, E. Derbyshire, T. Guaita, J. Eisert,
Physical Review Letters **133**, 240604 (2024),
(Lanl e-print 2309.12933).
- [33] “ReQuSim: Faithfully simulating near-term quantum repeaters”,
J. Walln fer, F. Hahn, F. Wiesner, N. Walk, J. Eisert,
PRX Quantum **5**, 010351 (2024),
(Lanl e-print arXiv:2212.03896).
- [34] “Analog information decoding of bosonic quantum LDPC codes”,
L. Berent, T. Hillmann, J. Eisert, R. Wille, J. Roffe,
PRX Quantum **5**, 020349 (2024),
(Lanl e-print arXiv:2311.01328).
- [35] “Anyon condensation and the color code”,
M. S. Kesselring, J. C. Magdalena de la Fuente, F. Thomsen, J. Eisert, S. D. Bartlett, B. J. Brown,
PRX Quantum **5**, 010342 (2024),
(Lanl e-print arXiv:2212.00042).
- [36] “Computational advantage of quantum random sampling”,
D. Hangleiter, J. Eisert,
Reviews of Modern Physics **95**, 035001 (2023),
(Lanl e-print arXiv:2206.04079).
- [37] “Estimating gate-set properties from random sequences”,
J. Helsen, M. Ioannou, J. Kitzinger, E. Onorati, A. H. Werner, J. Eisert, I. Roth,
Nature Communications **14**, 5039 (2023),
(Lanl e-print arXiv:2110.13178).
- [38] “Quantum photo-thermodynamics on a programmable photonic quantum processor”,
F. H. B. Somhorst, R. van der Meer, M. Correa Anguita, R. Schadow, H. J. Snijders, M. de Goede, B. Kassenberg, P. Venderbosch, C. Taballione, J. P. Epping, H. H. van den Vlekkert, J. F. F. Bulmer, J. Lugani, I. A. Walmsley, P. W. H. Pinkse, J. Eisert, N. Walk, J. J. Renema,
Nature Communications **14**, 3895 (2023),
(Lanl e-print arXiv:2201.00049).
- [39] “A single T-gate makes distribution learning hard”,
M. Hinsche, M. Ioannou, A. Nietner, J. Haferkamp, Y. Quek, D. Hangleiter, J.-P. Seifert, J. Eisert, R. Sweke,
Physical Review Letters **130**, 240602 (2023),
(Lanl e-print arXiv:2207.03140).

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- [40] “Classical surrogates for quantum learning models”,
F. J. Schreiber, J. Eisert, J. J. Meyer,
Physical Review Letters **131**, 100803 (2023),
(Lanl e-print arXiv:2206.11740).
- [41] “Exploiting symmetry in variational quantum machine learning”,
J. J. Meyer, M. Mularski, E. Gil-Fuster, A. A. Mele, F. Arzani, A. Wilms, J. Eisert,
PRX Quantum **4**, 010328 (2023),
(Lanl e-print arXiv:2205.06217).
- [42] “Time-energy uncertainty relation for noisy quantum metrology”,
P. Faist, M. P. Woods, V. V. Albert, J. M. Renes, J. Eisert, J. Preskill,
PRX Quantum **4**, 040336 (2023),
(Lanl e-print arXiv:2207.13707).
- [43] “Experimental observation of curved light-cones in a quantum field simulator”,
M. Tajik, M. Gluza, N. Sebe, P. Schüttelkopf, F. Cataldini, J. Sabino, F. Møller, S.-C. Ji, S. Erne, G. Guarnieri, S. Sotiriadis, J. Eisert, J. Schmiedmayer,
Proceedings of the National Academy of Sciences **120**, e2301287120 (2023),
(Lanl e-print arXiv:2209.09132).
- [44] “Efficient unitary designs with a system-size independent number of non-Clifford gates”,
J. Haferkamp, F. Montealegre-Mora, M. Heinrich, J. Eisert, D. Gross, I. Roth,
Communications in Mathematical Physics **397**, 995 (2023),
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