

Invited Talks at Conferences and Workshops

2nd Workshop on Machine Learning for Quantum Technology

Towards explainable AI for quantum science

Max Planck Institute for the Science of Light

Erlangen, Germany, 5.–8.11.2024

<https://indico.mpl.mpg.de/event/18/>

Annual Meeting of the Austrian Physical Society

Towards explainable AI for quantum science

Public evening lecture

Linz, Austria, 23.- 27.9.2024

<https://www.jku.at/en/institute-of-semiconductor-and-solid-state-physics/conferences/73rd-oepeg-annual-meeting-2024/>

International Conference on Quantum Optics

Towards explainable AI for quantum science

Obergurgl, Austria, 25.2.-2.3.2024

<https://www.uibk.ac.at/th-physik/obergurgl2024/>

Conference – Quantum simulations and algorithms with superconducting circuits

Towards an interpretable AI for quantum science

Kfar Blum, Israel, 11.-15.9.2022

<https://quantumsimulations2022.ph.biu.ac.il>

SFB *BeyondC* Conference – Frontiers of Quantum Information Science

Artificial agency and learning in (quantum) environments

Vienna, Austria, 4.-9.9. 2022

<https://sfb-beyondc-conference2022.univie.ac.at/about/>

5th Seefeld Workshop on Quantum Information

Artificial agency and learning in (quantum) environments

Seefeld, Austria, 26.6.-01.07.2022

<https://www.uibk.ac.at/th-physik/seefeld2022/>

CIFAR QIS Program Meeting / Quantum Machine Learning

Artificial agency and AI in the quantum domain

Online meeting, 8.12.2021.

Workshop on Artificial Scientific Discovery

Projective simulation as an interpretable AI for basic science

Online workshop, 29.6.-1.7.2021

<https://mpl.mpg.de/divisions/marquardt-division/workshops/2021-artificial-scientific-discovery>

Conference – Engineering intelligent quantum agents

Why physics should care about agency (online talk)

Noosa Resort, Queensland, Australia 10.-12.2.2021

<https://quantumagents.wordpress.com>

ELLIS online conference QPhML2020

Learning and AI in the Quantum Domain.

<https://www.youtube.com/watch?v=mNopAugzM6U&list=PLRiRoNGVCVlBYB1M8t0EncU94n6As0-Da&index=4&t=1205s>

VDSP-ESI Winter School 2020

Machine Learning in Quantum Science

Wien, Austria, 10.-20.02.2020

<https://vds-physics.univie.ac.at/winter-school-2020/>

Cologne-Grenoble Philosophy of Memory Workshop

A formal model of episodic memory with applications in action theory and artificial intelligence

Köln, Germany, 1.-2.11.2019

<http://phil-mem.org/events/2019-cologne.html>

International Conference on Free Will and Causality

A Stochastic Process Model for Free Agency under Indeterminism

Düsseldorf, Germany, 26.-27.09 2019

<https://indmet.weebly.com/free-will-and-causality.html>

Quantum Limits of Knowledge

Artificial agency and quantum experiment

Kopenhagen, Dänemark, 19.-21.06.2019

<https://indico.nbi.ku.dk/event/1160/>

International Conference on Network Games, Tropical Geometry, and Quantum

Projective simulation for artificial intelligence

Berlin, Germany, 3.-7.06.2019

<https://www3.math.tu-berlin.de/combi/dmg/TES-Summer2019/conference.html>

Workshop Machine Learning for Quantum Technology

Reinforcement learning and AI for quantum experiment

Erlangen, Germany, 8.-10.05.2019

<https://indico.mpl.mpg.de/event/2/>

Quantum Computing – From Algorithms to Applications

Learning and artificial intelligence in the quantum domain

Obergurgl, Austria, 15.-19.4.2019.

<http://atomchip.org/qucom2019/>

SFB-FoQuS International Conference

Learning and artificial intelligence in the quantum domain

Innsbruck, Austria, 4.-8.2.2019.

<https://www.uibk.ac.at/congress/focus/sfb-program.pdf>

Quantum Technology International Conference QTECH2018 (Plenary talk)
Learning and artificial intelligence in the quantum domain
Paris, France, 5.-7.9.2018.
<http://premc.org/conferences/qtech-quantum-technology>

Workshop on Decision Theory and the Future of Artificial Intelligence
Transparency of Classical and Quantum AI
Munich, Germany, 26.-28.7.2018.
<http://www.decision-ai.org/2018/>.

International Workshop on Machine Learning and Physics
Projective simulation for machine-generated design of quantum experiments
Tsinghua University, Beijing, 4.-6.7.2018.
<http://mlphys2018.csp.escience.cn>

4th Seefeld workshop on Quantum Information
Learning agents and quantum foundations
Seefeld Tyrol, Austria, 1.-6.6.2018.
<https://www.uibk.ac.at/th-physik/qi-seefeld2018/>

Workshop der Heisenberg Gesellschaft “Quantenphysik an der Schule”
Quanteninformation und Verschränkung
Weilburg, Germany, 23.6.2018.
<http://www.heisenberg-gesellschaft.de/aktuelles/5-workshop-zur-quantenphysik-an-der-schule>

Conference on Algorithmic Information, Induction, and Observers in Physics (cancelled)
Why Physics should care about agency.
Perimeter Institute, Canada, 9.-13.4.2018.
<https://perimeterinstitute.ca/conferences/algorithmic-information-induction-and-observers-physics>

Quantum Machine Learning & Biomimetic Quantum Technologies (Plenary talk)
Learning and artificial intelligence in the quantum domain
Bilbao, Spain, 19.-23.03.2018

82. Jahrestagung der DPG und DPG-Frühjahrstagung (Plenary talk)
Learning and artificial intelligence in the quantum domain
Erlangen, Germany, 4.3.2018 - 9.3.2018

Quantum Information Technologies: Challenges and Applications
Quantum learning agents
Edinburgh, United Kingdom, 30.-31.10.2017

14th Granada Seminar on Computational and Statistical Physics
Projective Simulation for learning and agency
Granada, Spain, 20.-23.06.2017

Workshop on Participatory Realism
The view from nowhere. Why physics should care about agency
Stellenbosch, South Africa, 06.-08.06.2017

SANDU - Surprising AND Unexpected Paradoxes Of Physics Enable SCientific Understanding
Projective Simulation for learning and agency
Crisan, Danube Delta, Romania, 22.-26.05.2017

Winterschool on Quantum Networks
Projective Simulation for learning and agency
Obergurgl, Austria, 02.-07.04.2017

Conference on Agency and (quantum) physics
Introduction to agency and (quantum) physics
Konstanz, Germany, 20.-23.09.2016

Quantum Machine Learning Workshop (QML)
Projective simulation for learning and agency
Palm Dune Beach Lodge, KwaZulu-Natal, South Africa, 18.-22.07.2016

Workshop on Semantic Spaces at the Intersection of NLP, Physics and Cognitive Science
Projective Simulation for Learning and Agency
University of Strathclyde, Glasgow, United Kingdom, 11.06.2016

GDR IQFA 6th Colloquium
Quantum computation and learning
Institut d'Optique Graduate School, Palaiseau, France, 18.-20.11.2015

Causality in a Quantum World
Agency and (Quantum) Physics
Sunshine Coast, Australia, 16.-21.08.2015

10th International Conference on Soft Computing Models in Industrial and Environmental Applications (Plenary talk)
Quantum physics meets artificial intelligence
Burgos, Spain, 15.-17.06.2015

Quantum Theory: from foundations to technologies – QTFT
Agency in QBism
Linnaeus University, Växjö, Sweden, 08.-11.06.2015

Kick-off workshop on Agency and (quantum) physics (AQP2015)
Projective simulation as a physical model for agency
Innsbruck, Austria, 29.03.-02.04.2015

Quantum Computation, Quantum Information, and the Exact Sciences
Towards quantum artificial intelligence
LMU, Munich, Germany, 30.-31.01.2015

Seventh International Workshop DICE2014: Spacetime - Matter - Quantum Mechanics
Projective simulation for artificial intelligence
Castiglione, Italy, 15.-19.09.2014

10-Year Anniversary IQOQI Vienna
Panel discussion: What are "clouds on the horizon" of today's physics? Guests: Carlo Rovelli, Hans Briegel, Daniel Greenberger and Anton Zeilinger
IQOQI Vienna, Austria, 07.-08.07.2014

2nd Seefeld workshop on Quantum Information
Projective simulation for learning agents
Seefeld, Austria, 29.06.-04.07.2014

Entanglement and Speed-up: Philosophical Issues in Quantum Computing
Entanglement and speed-up in measurement-based quantum computation
Stuttgart, Germany, 09.05.2014

Berge Fest: "In celebration of B.G. Englert's contributions to Quantum Information, Quantum Optics, and the Foundations of Quantum Mechanics."
Towards quantum artificial intelligence
CQT National University of Singapore, Singapore, 22.-26.04.2014

The Power of Information Conference 2014
Agency and Quantum Physics
St. Anne's College, Oxford, United Kingdom, 26.-29.03.2014

Öffentliche Gesamtsitzung der ÖAW: Ist unsere Zukunft vorhersehbar?
Quantenmechanik vs. Himmelsmechanik – Wie offen ist unsere Zukunft?
ÖAW, Wien, Austria, 14.11.2013

QuEBS 2013: Quantum Effects in Biological Systems Workshop
Projective simulation as a model for learning
IMBA Vienna, Austria, 29.06. - 03.07.2013

International Research Conference "Q-Start: Physics, Computer Science and Mathematics - Thoughts on Quantum Information"
Quantum Agents, Simulation and Biology
The Hebrew University of Jerusalem, Israel, 24.06. - 27.06.2013

Quantum Physics Meets the Philosophy of Mind
On Agency and Freedom Under the Laws of Nature
Catholic University of the Sacred Heart, Milan, Italy, 04.-06.06.2013

Kavli Institute for Theoretical Physics (KITP) Program: Control of Complex Quantum Systems
Quantum Agents, Simulation, and Biology
University of California, Santa Barbara, USA, 07.01. – 28.03.2013

Kavli Institute for Theoretical Physics (KITP) Program: Control of Complex Quantum Systems
Projective Simulation for Classical and Quantum Autonomous Agents
University of California, Santa Barbara, USA, 07.01. – 28.03.2013

62. Jahrestagung 2012 der Österreichischen Physikalischen Gesellschaft (ÖPG)
Quantum physics, simulation, and computation
Universität Graz, Graz, Austria, 18. – 21.09.2012

Workshop on Theoretical aspects of indeterminism and agency
On machine creativity and the notion of free will
University of Utrecht, The Netherlands, 12. – 13.01.2012

Workshop on Quantum to Classical Crossover in Mechanical Systems
Entanglement and intra-molecular cooling in biological systems
Lorentz Center, Leiden, The Netherlands, 04. – 07.10.2011

The Philosophy of Computer Science and Artificial Intelligence, ESF Ponta Delgada Workshop
Simulation, Computation, and (Quantum) Physics
Ponta Delgada, Azores, Portugal, 07. – 10.09.2011

14th Congress of Logic, Methodology and Philosophy of Science
Simulation, computation, and physics -- What can we learn about the world?"
Nancy, France, 19. – 26.07.2011

Theory of Quantum Computation (TQC 2011), Conference
Projected simulation for artificial intelligence
Madrid, Spain, 24. – 25.03.2011

Workshop on Entanglement, Quantum Information and the Quantum-to-Classical Transition
Quantum information and entanglement in biological systems
Rom, Italy, 05. – 07.05.2011

Quantum Repeater Workshop
Perspectives on the quantum repeater
Hannover, Germany, 24. – 25.03.2011

Workshop on Quantum Mechanics and Cancer Biology
Quantum information and entanglement in biological systems
Tempe, AZ, USA, 25. – 27.10.2010

Quantum Africa 2010 (conference)
Quantum effects in Biology
Durban, South Africa, 20. – 23.09.2010

Safed Workshop on Quantum Decoherence and Thermodynamics
Quantum control and entanglement in biological systems
Safed, Israel, 22.-29.08.2010

SCALA Summer School on Scalable Quantum Computing with Light and Atoms
Measurement-based quantum computation
Cargese, Corsica, 17.-29.08.2010

19th International Laser Physics Workshop
Quantum information and entanglement in biological systems
Foz do Iguaçu, Brasil, 05. – 09.07.2010

The Principles and Applications of Control in Quantum Systems (PRACQSYS 2010)
Quantum information and entanglement in biological systems
The Sandbjerg Estate Aarhus University Conference Center, Sønderborg, Denmark, 15. – 18.06.2010

ESF Research Conference: Quantum Engineering of States and Devices: Theory and Experiments
Quantum effects in biological systems
Universitätszentrum Obergurgl, Obergurgl, Austria, 05. – 10.06.2010

14th annual Seven Pines Workshop: Decoherence and Entanglement
Entanglement and (de)coherence in biology
Stillwater, Minnesota, USA, 5.-9.5.2010

Workshop on Quantum measurement and chemical spin dynamics
Entanglement in biological systems
Lorentz Center, Leiden, The Netherlands, 15. – 19.03.2010

Symposium on Quantum coherence effects, in Honour of Marlan O. Scully
Quantum control and entanglement in the avian chemical compass
Ulm, Germany, 11.-12.02.2010

Workshop on Entanglement beyond the Optical Regime
Cluster and Graph States
Anaheim/Orange County, CA, USA, 07. – 10.02.2010

2nd Black Forest Focus on Soft Matter
Entanglement and intra-molecular cooling in biological systems
Titisee, Germany, 22. - 24.10.2009

International Conference on Quantum Foundation and Technology: Frontier and Future
Quantum control and entanglement in the avian compass
Shanghai, PR of China, 17. – 22.07.2009

Workshop on Quantum Effects in Biological Systems (QuEBS 2009)
Quantum control and entanglement in the chemical compass
Lisbon, Portugal, 07. – 10.07.2009

The 39th Winter Colloquium on the Physics of Quantum Electronics (PQE 09)
Entanglement in biological systems? - A quantum thermodynamic perspective
Snowbird, Utah, USA, 04. – 08.01.2009

Nanosystems Initiative Munich (NIM) Workshop: Nonequilibrium thermodynamics at the nanoscale
Entanglement dynamics in open dissipative systems
Augsburg, Germany, 24. – 25.09.2008

Gordon Research Conference (GRC) 2008 on Quantum Information Science
Entanglement in Quantum Many Body Systems
Big Sky, Montana, USA, 31.08. – 05.09.2008

Conference on Frontiers of Quantum and Mesoscopic Thermodynamics
Entanglement in quantum many-body systems far away from equilibrium: Are there non-trivial quantum effects in biology?
Prague, Czech Republic, 28.07. – 02.08.2008

Fachgespräch Quanteninformationstechnologien
Der Quantenrepeater als Modellsystem für die Quanteninformationstechnologie
Bonn, Bad Godesberg, Germany, 11.06.2008

International workshop on the mathematical foundations of quantum control and quantum information theory
Recent developments in measurement-based quantum computations
Madrid, Spain, 26. – 30.05.2008

The Optical Society (OSA) Workshop on Entanglement and Quantum Decoherence (EQD)
Entanglement in quantum many-body systems far away from thermodynamic equilibrium
Nara, Japan, 28. – 30.01.2008

Workshop on Noise Information & Complexity @ Quantum Scale
Entanglement in quantum systems far away from TD equilibrium-- Are there non-trivial quantum effects in biology?
Ettore Majorana Centre, Erice (Sicily), Italy, 04. 10.11.2007

Interfaces between Physics and Computer Science, Summer School
Entanglement in spin gases & lattices; weighted graph states
Bremen, Germany, 11. – 22.06.2007

Interfaces between Physics and Computer Science, Summer School
Theory of measurement-based quantum computation - Cluster and graph states as entanglement resources criteria for universality
Bremen, Germany, 11. – 22.06.2007

2007 Workshop in Quantum Algorithms and Applications (QAA07), Sydney
Universality and simulation of measurement-based quantum computation
Sydney, Australia, 28.05. – 02.06.2007

Gordon Research Conference (GRC) on Quantum Information Science
Universality and classical simulation of quantum computation
Il Ciocco, Barga, Italy, 15. – 20.04.2007

71. Jahrestagung der Deutschen Physikalischen Gesellschaft und DPG Frühjahrstagung des
Arbeitskreises Festkörperphysik
Universality and classical simulation of quantum computation
Regensburg, Germany, 26. – 30.03.2007

International Workshop on Measurement-based quantum computing (MBQC)
Universal resources for measurement-based quantum computation
Oxford, United Kingdom, 18. – 21.03.2007

QUROPE Winter School on Quantum Information
Introduction to basic concepts of quantum information and computation
Oberurgl, Austria, 18.-24.2.2007

8th International Conference on Quantum Communication, Measurement and Computing
Universality and classical simulation of quantum computation
Tsukuba, Japan, 28.11. – 03.12.2006

2006 US-Japan Workshop on Quantum Information Science
Multi-partite entanglement purification and applications
Wailea Conference Center, Maui, Hawaii, USA, 16. – 20.10.2006

The International Conference on Quantum Foundation and Technology: Frontier and Future
(ICQFT'06)
Universality and classical simulation of quantum computation
Hangzhou, PR of China, 25. – 31.08.2006

Workshop on Theory and Technology in Quantum Information, Communication, Computation
and Cryptography
Universal resources for measurement-based quantum computation
Miramare, Trieste, Italy, 12. – 23.06.2006

2nd Bellairs 2006 Workshop on “Logical and Semantical Methods in Quantum Computation”
A measurement-based framework for treating SAT-problems
Bellairs Research Centre, Holetown, Barbados, 20. – 24.03.2006

2nd Bellairs 2006 Workshop on “Logical and Semantical Methods in Quantum Computation”
Universal resources for quantum computation
Bellairs Research Centre, Holetown, Barbados, 20. – 24.03.2006

8th Annual Workshop "Southwest Quantum Information and Technology (SQuInT) 2006
Introduction to graph states and the one-way quantum computer (tutorial)
Albuquerque, New Mexico, USA, 17. – 19.02.2006

Kavli Institute for Theoretical Physics (KITP) workshop “Topological Phases and Quantum Computation”

Entanglement in strongly interacting many-body systems

University of California, Santa Barbara, Cal. USA, 21.02. – 19.05.2006

The 36th Winter Colloquium on the Physics of Quantum Electronics (PQE 06)

Steady-state entanglement in open driven quantum systems

Snowbird, Utah, USA, 02. – 06.01.2006

Workshop on Bose-Einstein Conensation and Quantum Information

Entanglement and decoherence in spin gases

Erwin Schrödinger Institute, Vienna, Austria, 18. – 20.12.2005

Workshop on Being Bayesian in a Quantum World (BBQW)

What is a quantum computation?

Konstanz, Germany, 01. – 05.08.2005

Perimeter Institute for Theoretical Physics (PI) Workshop “Quantum Information, Computation and Logic: Exploring New Connections”

What is a quantum computation?

Perimeter Institute, Waterloo, Canada, 17. – 22.07.2005

International School of Physics “Enrico Fermi”

Quantum information and entanglement, one-way quantum computer

Varenna, Italy, 05. – 15.07.2005

9th International Conference on Squeezed States and Uncertainty Relations (ICSSUR’05)

Entanglement and decoherence in a spin gas

Besancon, France, 02. – 06.05.2005

3rd Asia Workshop on Quantum Information Science

Lecture Series on graph states & applications in Quantum Information and Entanglement and decoherence in spin gases

Singapore, 4.1.-15.1.2005

Workshop on Quantum Entanglement in Physical and Information Sciences

Entanglement and Decoherence in semi-quantal gases

Pisa, Italy, 14.12. - 18.12.2004

Workshop on Quantum Information Science 2004 (QIS)

Entanglement in semi-quantal gases

Cambridge, United Kingdom, 20.9-1.10.2004, 29.11-2.12.2004

International Symposium on Entanglement, Information & Noise

Theory of graph states

Krzyzowa (Kreisau), Poland, 15.6.-18.6.2004

Dagstuhl Perspectives Workshop on Quantum Computing
Quantum computing and multiparticle entanglement
Schloss Dagstuhl, Wadern, Germany, 11.5.-14.5.2004

Hirschegg International DFG workshop, Quantum Entanglement – From Error Correction to Secure Key Distribution
Theory of graph states
Hirschegg, Germany, 1.4.-2.4.2004

Gordon Conference on Quantum Information Science
Macroscopic entanglement, (Chairman)
Ventura, California, USA, 22.2.-27.2.2004

NORDITA/QUANTOP Workshop on Quantum Information and Ordered Systems
Entanglement in graph states
Niels Bohr Institute (NBI), Copenhagen, Denmark, 11.9.-14.9.2003

Benasque meeting on quantum information and quantum optics
Graph states and their applications
Benasque, Spain, 22.6.-11.7.2003

European Science Foundation (ESF) meeting on Quantum Information and Computation
Multi-party entanglement purification of a class of graph states
Erice, Sicily, Italy, 15.3.-22.3.2003

Obergurgl Quantum Optics Meeting
Multi-party entanglement purification of a class of graph states
Obergurgl, Austria, 23.2.-1.3.2003

Mathematics in Nanoscale Science and Engineering -- NANO2002 Workshop II: Joint IPAM/MSRI Workshop on Quantum Computing
Measurement-based quantum computation
University of California, Los Angeles, USA, 21.10-23.10.2002

Quantum Foundations in the Light of Quantum Information
The quantum-foundational significance of measurement-based models of quantum computation
Centre de Recherches Mathematiques (CRM) Universite de Montreal, Canada, 13.10.-20.10.2002

Wigner Centennial Conference
Measurement-based quantum computation
Pecs, Hungary, 8.7.-12.7.2002

NIST Meeting on Quantum Computation in Optical Lattices
Measurement-based quantum computation
National Institute of Standards and Technology (NIST), Gaithersburg, Maryland, USA, 3.6.-5.6.2002

Quantum Information Theory Workshop
Private entanglement over noisy channels
Trinity College, Dublin, Ireland, 21.3.-23.3.2002

NOSTACK Workshop on the implications of recent results in quantum computing for the future of information security
Security of quantum repeaters and long distance quantum communication
Schlosshotel Weyberhoefer, Sailauf, Germany, 21.1.-23.1.2002

The Fifth Workshop on Quantum Information Processing (QIP 2002)
Quantum computing using cluster states
IBM T.J. Watson Research Center, Yorktown Heights, New York, USA, 14.1.-17.1.2002

ITP Conference on Quantum Information
Quantum computing using one-qubit measurements only
Santa Barbara, California, USA, 26.12.-30.12.2001

Workshop on coherent evolution in noisy environments (COHEVOL)
Multiparticle entanglement and quantum computation in spin lattices with an Ising-type interaction
Max-Planck-Institut für komplexe Systeme, Dresden, Germany, 25.5.2001

Workshop on solid-state quantum computing
Quantum computers and multi-particle entanglement in spin-lattices
Warsaw, Poland, 26.4.-29.4.2001

ECAMP / DPG Frühjahrstagung Berlin
Quantum computers and multiparticle entanglement ("Hot topic talk")
Berlin, Germany, 2.4.-6.4.2001

GAFOS 2001- German-American Frontiers of Science Symposium
Theory of quantum information and computation (Invited Poster)
Bad Homburg, Germany, 7.6.-10.6.2001

Workshop on quantum information processing and communication (QIPC)
Persistent entanglement in arrays of interacting particles
Potsdam, Germany, 27.9.-29.9.2000

Workshop on quantum information and quantum optics
Multiparticle entanglement in arrays of interacting particles
Benasque, Spain, 10.7.2000

LMU München, Öffentlicher Informationsabend zum Thema: "Mit Quanten ist zu rechnen. Kalte Materie, Chaos und Computer aus quantenmechanischer Sicht"
Quantencomputer und Kryptographie
München, Germany, 23.5.2000

Cryptography meeting
Security in long-distance quantum cryptography
Royal Holloway College, London, United Kingdom, 26.5.2000

Conference on Quantum Communication Measurement, and Computing (QCM98)
Quantum repeaters for communication
Evanston, Illinois, USA, 22.8.-27.8.1999

Laser 99 (Budapest)
Quantum computing in optical lattices
Budapest, Hungary, 2.7.-6.7.1999

Quantum Electronics and Laser Science Conference (QELS)
Quantum information, networks, and computing
Baltimore, Maryland, USA, 23.5.-28.5.1999

Spring meeting of the German Physical Society
Imperfekte lokale Operationen und ihre Bedeutung für die Quantenkommunikation
Heidelberg, Germany, March 1999

Spring meeting of the German Physical Society
Quantum computing in optischen Gittern
Heidelberg, Germany, March 1999

QIKI Workshop über Quanten-Informatik
Quanten-Computing in optischen Gittern
Universität Karlsruhe, Germany, 21.12.-22.12.1998

Hannover, Verschränkung
EPR-Paare und ihre Relevanz für die Quantenkommunikation
Norddeutscher Lasertag, Germany, 9.12.1998 (Plenary Talk)

International Conference on Trapped Charged Particles and Fundamental Physics
Quantum computing in optical lattices
Monterey, California, USA, 31.8.-4.10.1998

TMR meeting on the Physics of Quantum Information
Quantum repeaters
Helsinki, Finland, 24.9.-26.9.1998

Workshop on Quantum Information and Quantum Optics
Quantum repeaters for communication
Benasque, Spain, July 1998

Workshop on Quantum Computation and Mesoscopic Physics
Quantum repeaters for communication
Scuola Normale Superiore, Pisa, Italy, 25.6.-27.6.1998

Dagstuhl-Seminar on Quantum Algorithms
Quantum repeaters for communication
Schloss Dagstuhl, Wadern, Germany, 10.5.-15.5.1998

EMCSR98 - Meeting on Cybernetics and Systems Research
Einstein-Podolsky-Rosen correlations made useful: A quantum-communication perspective
Vienna, Austria, 14.4.-17.4.1998

Spring meeting of the German Physical Society
Quantum repeaters: Quantum communication over dissipative information channels
Konstanz, Germany, March 1998

Almagro workshop on quantum information, Universidad Castilla la Mancha
Quantum communication over noisy channels
Almagro (Ciudad Real) Spain, 16.10.-19.10.1997

APS annual meeting
Multiple light scattering from a pair of non-identical atoms, (Poster)
Washington, USA, April 1997

24th Winter Colloquium on the Physics of Quantum Electronics
Interactive photodetection in cavity-QED experiments
Snowbird, Utah, USA, 12.1.-15.1.1997

Conference on Quantum Coherence and Interference in Fundamental and Applied Physics
Influence of atomic-beam statistics on the emission spectrum of a microlaser
Alta, Wyoming, USA, 9.8.-12.8.1995

NSF Summer School on the Foundations and Applications of Quantum Mechanics
Quantum Theory of the Laser
Casper College, Wyoming, USA, 1.8-6.8.1995

Laser Optics Conference 95
Dynamic noise reduction in multi-level lasers: Nonlinear theory and the damping basis approach
St. Petersburg, Russia, 26.6-1.7.1995

25th Winter Colloquium on the Physics of Quantum Electronics
Spectral properties of a laser with nonpoissonian atomic injection
Snowbird, Utah, USA, 3.1-6.1.1995

Atomic Physics Symposium in Honor of Willis E. Lamb
Coherent atom-field interaction and the quantum theory of the laser
Texas A&M University, Texas, USA, 18.11-19.11.1994

Annual Meeting of the Optical Society of America
Corrections to reservoir theory in the one-atom laser
Dallas, Texas, USA, 2.10-7.10.1994

Conference on Atomic Coherence and Interference in Applied and Fundamental Physics
Dynamical noise reduction in the ion-trap laser
Crested Butte, Colorado, USA, 7.8-11.8.1994

Spring meeting of the German Physical Society
Ein-Atom-Maser mit periodischem und verauschtem Pumpen
Hamburg, Germany, March 1994

MPQ Summer Festival 92
Master equations for lossy systems
Garching, Germany, July 1992

Spring meeting of the German Physical Society
Jaynes-Cummings-Modell mit Dämpfung
Hamburg, Germany, 23.2.1992

Invited Colloquia and Seminars

Vortrag: Quantenmechanik und Philosophie – Urania Graz

Quantenphysik im Zeitalter der künstlichen Intelligenz: Wo ist der "Beobachter" geblieben und wer macht hier eigentlich die Experimente?

Graz, Austria, 13.11.2024

<https://physik.uni-graz.at/de/neuigkeiten/quantenmechanik-und-philosophie/>

Vienna Physics Colloquium – University of Vienna

Towards explainable AI for quantum science

Vienna, Austria, 13.5.2024

<https://physik.univie.ac.at/events/events-detailansicht/news/hans-juergen-briegel-innsbruck-towards-explainable-ai-in-quantum-science/>

Colloquium Ehrenfestii – Leiden University

Towards explainable AI and artificial agency in quantum science

Lorentz Institute for Theoretical Physics

Leiden, The Netherlands, 6.9.2023

<https://www.universiteitleiden.nl/en/science/physics/colloquia/colloquium-ehrenfestii>

Cluster Kolloquium "Maschinelles Lernen"

Learning and Artificial Intelligence in the Quantum Domain.

Tübingen, Germany, 05.02.2020

<https://uni-tuebingen.de/forschung/forschungsschwerpunkte/exzellenzcluster-maschinelles-lernen/veranstaltungen/veranstaltungen/#c929548>

MPQ Colloquium – Max-Planck-Institut für Quantenoptik

Learning and artificial intelligence in the quantum domain

Garching, Germany, 4.6.2019

<https://www.mpq.mpg.de/5381003/colloquien-ve>

Munich Center for Mathematical Philosophy (MCMP)

Projective simulation as a model for learning and agency,

13.12.2017 (Colloquium)

Universität Konstanz, Kolloquium AG Müller,

The view from nowhere. Why physics should care about agency,

20.07.2017 (Seminar)

Universität Konstanz, Philosophisches Kolloquium,

Projective Simulation in Action: Handlungen in der (Quanten-)Physik,

17.11.2016 (Colloquium)

Universität Konstanz, Physikalisches Kolloquium,

Quantum physics meets artificial intelligence,

08.11.2016 (Colloquium)

Freiburg, Institute for Advanced Studies (FRIAS),

Projective simulation for learning agents,

14.07.2015 (Colloquium)

University of Vienna, CoQuS Colloquium,
Quantum agents, simulation, and biology,
16.12.2013 (Colloquium)

University of New Mexico, Centre for Quantum Information and Control (CQuIC),
Quantum computers, simulators and agents,
21.11.2013 (Seminar)

Universidad Complutense Madrid,
Quantum agents, simulation, and biology,
23.10.2013 (Seminar)

Descartes Centre for the History and Philosophy of the Sciences and the Humanities
(Universiteit Utrecht),
Quantum computers, simulators, and agents,
20.06.2013 (Seminar)

Munich Physics Colloquium (LMU),
Quantum computers, simulators, and agents,
13.05.2013 (Colloquium)

MCMP - Munich Center for Mathematical Philosophy (LMU),
On agency and freedom under the laws of nature,
24.04.2013, (Colloquium)

Colloqui delle Classe di Scienze (Scuola Normale Superiore di Pisa),
Quantum physics, computation, and simulation,
17.04.2013 (Colloquium)

Institute for Christian Philosophy, University of Innsbruck,
On agents, creativity, and freedom under the laws of Nature,
10.04.2013 (Seminar)

Physikalisches Kolloquium (Friedrich-Alexander-Universität, Erlangen-Nürnberg),
Quantum Physics, Simulation, and Computation,
10.12.2012 (Colloquium)

The Zurich Physics Colloquium (ETH Zurich),
Quantum physics, computation, and biology,
02.05.2012 (Colloquium)

Bristol, Department of Physics,
Quantum control and entanglement in the chemical compass,
07.10.2009 (Seminar)

Freiburg, FRIAS,
Non-trivial quantum effects in biology?,
29.06.2009 (Colloquium)

Ulm, Universität Ulm,
Quanteninformation in der Biologie, Physikalisches Kolloquium,
27.04.2009 (Colloquium)

UBC Vancouver, Physics Department,
Entanglement in quantum many-body systems away from thermodynamic equilibrium,
Dec. 2008 (Seminar)

Calgary, Institute for Quantum Information Science University of Calgary, *Entanglement in quantum many-body systems away from thermodynamic equilibrium*, 11.12. 2008,
(Colloquium)

Augsburg, Augsburger Physikalisches Kolloquium,
Entanglement in non-equilibrium quantum many-body systems. - Are there non-trivial quantum effects in biology?,
24.11.2008 (Colloquium)

Singapore, Centre for Quantum Technologies,
New developments in measurement-based quantum computation,
25.03.2008 (Colloquium)

RIKEN, Tokyo (Nori group),
Multi-partite entanglement in ordered and disordered systems,
1.2.2008 (Seminar)

RIKEN, Tokyo (Nori group),
Lectures on graph states,
31.01.2008 (Seminar)

Rom, University La Sapienza, Physics Department,
Theory of graph states and its applications,
30.01.2007 (Colloquium)

Bayreuth, University,
Quanteninformation und Verschränkung in Vielteilchensystemen,
13.12.2005 (Colloquium)

Kaiserslautern, University,
Multi-particle entanglement in ordered and disordered systems,
09.02.2005 (Colloquium)

Hefei, Hefei USTC,
Theory of graph states,
2.11.-15.11.2004 (Seminar)

Peking, Tsinghua University,
(1) *Measurement-based quantum computation*, (2) *Theory of graph states*,
2.11.-15.11.2004 (Seminar)

Zürich, ETH Zürich,
Theory of graph states,
24.5.2004 (Seminar)

Garching, MPI für Quantenoptik,
Multiparticle entanglement & Quantum Computing,
4.5.2004 (Seminar)

Wien, Technical University,
Theory of graph states,
15.3.2004 (Seminar)

Caltech, Institute for Quantum Information,
Graph states: Properties & Application,
10.2.2004 (Seminar)

Essen, University,
Quantencomputer: Konzepte und Perspektiven,
10.12.2003 (Colloquium)

Dresden, MPI für komplexe Systeme,
Multiparty entanglement purification of a class of graph states,
28.4.2003 (Colloquium)

Tübingen, University,
Quantencomputer: Konzepte und Perspektiven,
5.2.2003 (Colloquium)

Innsbruck, University,
Quantencomputing and Quantencommunication,
24.1.2003 (Colloquium)

München, LMU University,
Quanten-Information und Computer,
29.11.2002 (Tag der Informatik)

Düsseldorf, University,
Skalierbare Quantenrechner,
12.6.2002 (Seminar)

Bell Labs (Lucent),
Quantum computing using cluster states,
18.1.2002 (Seminar)

Stuttgart, University,
Entanglement, Correlation, and Logic,
10.1.2002 (Seminar)

Innsbruck, University,
Quanteninformationsverarbeitung,
14.12.2001 (Computer Science Colloquium)

Neuchatel, University,
Quantum information and computer,
29.1.2001 (Colloquium)

Braunschweig, University,
Multiparticle entanglement and quantum computation,
24.1.2001 (Seminar)

Darmstadt, Technical University,
Quantenkommunikation und Quantencomputer,
5.1.2001 (Colloquium)

Karlsruhe, University,
Skalierbare Quantenrechner,
7.11.2000 (Computer Science Colloquium)

Infineon (Company),
Quantencomputer und Kryptographie,
29.6.2000 (Seminar)

Oxford University,
Persistent entanglement in arrays of interacting particles,
30.5.2000 (Seminar -Ekert group)

Halle, University,
Quantum information and computer,
19.1.2000 (Seminar)

Erlangen, University,
Quantencomputer und Quantenkommunikation,
13.12.1999 (Colloquium)

Stuttgart, Technical University,
Quantum information and computing,
7.12.1999 (Seminar)

Munich, University (LMU),
Quantencomputer und Quantenkommunikation,
17.11.1999 (Fakultätskolloquium)

Munich, Technical University (TU),
Quantencomputer und Quantenkommunikation,
30.6.1999 (Theoretical Physics Colloquium)

Hamburg, Institut für Laserphysik,
Quantum computing in optical lattices,
8.6.1999 (Seminar)

NIST Gaithersburg,
Quantum computing in optical lattices,
28.5.1999 (Seminar - Bill Phillips Group)

Harvard University, Joint Atomic Physics Colloquium
Quantum computing in optical lattices,
15.5.1999

Pavia University, Theoretical Quantum Optics Seminar,
Quantum computing in optical lattices,
25.3.1999

Oxford University, Centre for Quantum Computation
Quantum repeaters,
27.1.1999 (Seminar, Artur Ekert group)

Innsbruck, University,
Quantum repeaters and communication,
29.4.1998, (Seminar)

Munich, University (LMU), Oberseminar über aktuelle Probleme der Theoretischen Physik
Quantum repeaters and communication,
20.2.1998

Optical Science Center, Tucson, Arizona, USA
Interactive Photon Counting,
14.1.1997 (Quantum Optics Seminar)

Harvard-Smithsonian Center for Astrophysics, Massachusetts, USA,
Interactive Photon Counting
9.12.1996 (ITAMP Colloquium)

Harvard University, Cambridge, Massachusetts, USA,
Laser dynamics of single (trapped) atoms,
2.2.1996 and 23.2.1996 (Rick Heller group seminar)

UT Austin, Austin, Texas, USA
Laser dynamics of single (trapped) atoms,
17.11.1995 (Atomic Physics Seminar)

Oregon, University, Eugene, Oregon, USA,
Atomic beam statistics and the emission spectrum of a microlaser,
24.8.1995 (Quantum Optics Seminar)

Munich University (LMU), Munich, Germany,
Dynamic noise reduction in multilevel lasers,
13.7.1995 (Quantum Optics Seminar)

Gesamthochschule Essen, Essen, Germany,
Dynamic noise reduction in multilevel lasers, Quantum Optics Seminar,
19.6.1995

Innsbruck, University, Innsbruck, Austria,
Dynamic noise reduction in multilevel lasers,
4.7.1995 (Quantum Optics Seminar)

Harvard University, Cambridge, Massachusetts, USA,
Dynamics of microscopic lasers and masers,
22.3.1995 (Atomic Physics Seminar)

University of North Texas, Denton, Texas, USA,
Quantum effects in microscopic lasers and masers,
28.2.1995 (Colloquium)

University of Houston, Houston, Texas, USA,
Quantum effects in microscopic lasers and masers,
7.2.1995 (Colloquium)

Texas A&M University, College Station, Texas, USA,
Theory of damping-bases,
6.12.1994 (Atomic Physics Seminar)

Max-Planck-Institut für Quantenoptik, Garching, Germany,
The damping-basis method: A novel approach to treating dissipative systems in quantum optics,
30.6.1994 (Theory Seminar)

AG Nichtklassische Strahlung, Humboldt University Berlin, Berlin, Germany,
Dynamics of a microlaser with aperiodic and noisy pump,
Feb. 199, (Laser Seminar)

University of Munich (LMU), Munich, Germany,
Ein-Atom-Maser mit variabler Pumpstatistik,
26.2.1993, (Quantum Optics Seminar)

Max-Planck-Institut für Quantenoptik, Garching, Germany,
Jaynes-Cummings model with damping,
12.2.1992 (Theory Seminar)

University of Munich (LMU), Munich, Germany,
Jaynes-Cummings Modell mit Dämpfung,
17.1.1992 (Seminar)