

Erez Zohar – Curriculum Vitae

September 2022

1. Personal Details

Date of birth: 31.12.1984

Country of birth: Israel

Work address: Office 109, Kaplun Building
Racah Institute of Physics
Givat Ram Campus
The Hebrew University of Jerusalem, Jerusalem 91904, Israel

Email address: erez.zohar@mail.huji.ac.il

2. Employment

7/2019 – **Senior Lecturer (Assistant Professor)**
Racah Institute of Physics
Hebrew University of Jerusalem
Jerusalem, Israel

1/2018 – 6/2019 **Max Planck Harvard Research Center for Quantum Optics (MPHQ) Postdoctoral Researcher**
Max-Planck-Institut für Quantenoptik (MPQ)
Theory Division, headed by Prof. J. Ignacio Cirac
Garching bei München, Germany

6/2016 – 12/2017 **Senior Postdoctoral Researcher**
Max-Planck-Institut für Quantenoptik (MPQ)
Theory Division, headed by Prof. J. Ignacio Cirac
Garching bei München, Germany

3/2014 – 5/2016 **Alexander von Humboldt Postdoctoral Researcher**
Max-Planck-Institut für Quantenoptik (MPQ)
Theory Division, headed by Prof. J. Ignacio Cirac
Garching bei München, Germany

3/2014 – 5/2014 **Postdoctoral Researcher**
Max-Planck-Institut für Quantenoptik (MPQ)
Theory Division, headed by Prof. J. Ignacio Cirac
Garching bei München, Germany

3/2008 – 1/2014 **Teaching Assistant**
School of Physics and Astronomy, Tel Aviv University

3. Higher Education

- 3/2014 – 6/2019 **Postdoctoral Studies**
Max-Planck-Institut für Quantenoptik, Garching bei München, Germany
Host: Prof. J. Ignacio Cirac
(as an Alexander-von-Humboldt fellow between 6/2014-5/2016, as an MPQ-Harvard fellow since 1/2018)
- 10/2010 – 12/2013 **Ph.D. (Direct Track), Physics**
School of Physics and Astronomy, Tel Aviv University
Supervisor: Prof. Benni Reznik
(as an Adams fellow since 10/2012)
- 10/2009 – 9/2010 **M.Sc., Physics**
School of Physics and Astronomy, Tel Aviv University
Supervisor: Prof. Benni Reznik
- Moved to the Ph.D. Direct Track after a year
- 10/2006 – 7/2009 **B.Sc., The combined Mathematics-Physics Program**
School of Physics and Astronomy, Tel Aviv University

During the 3rd year – a research project under the supervision of Prof. Yoram Dagan (honors program)

4. Grants, Scholarships and Fellowships

- 5/2022 – 4/2023 **Google Research Scholar Award** – Using Duality Transformations for Quantum Simulation
- 10/2020 – 9/2024 **Israel Science Foundation (ISF) Personal Research Grant** – Quantum Simulators of Gauge Theories – the Next Generation
- 1/2018 – 6/2019 **Max Planck Harvard Research Center for Quantum Optics (MPHQ) Postdoctoral Fellowship**
Granted by the joint MPHQ research center of two research institutions, for postdoctoral research in the Max Planck institute of Quantum Optics
- 6/2014-5/2016 **Alexander von Humboldt Fellowship for Postdoctoral Researchers**
Granted by the Alexander von Humboldt society, for postdoctoral research in the Max Planck institute of Quantum Optics
- 10/2012-3/2014 **Adams Fellowship**
Granted by the Israel Academy of Sciences and Humanities, from 10/2012 until the end of the PhD studies (given every year to new 10-12 excellent PhD students, nominated by the universities, until the completion of their PhDs).
- 10/2011-9/2012 **Dean's Excellence Scholarship**
Faculty of Exact Sciences, Tel-Aviv University

5. Prizes and Awards

- 2022** **Google Research Scholar Award** in the field of Quantum Computing
- 2020** **Highly commended young quantum scientist**
2020 Nomination round of the International Quantum Technology Young Scientist Award, IOP
- 2015** **The Rector's List of Best Teaching Assistants, Tel Aviv University**
For the academic year 2013-2014
- 2014** **The Rector's Award for Excellence in Teaching, Tel Aviv University**
For the academic year 2012-2013
- 2014** **The Rector's List of Best Teaching Assistants, Tel Aviv University**
For the academic year 2012-2013
- 2013** **Anne and Maurice Cohen Research Excellence Prize**
School of physics and Astronomy, Tel Aviv University
- 2013** **The Rector's List of Best Teaching Assistants, Tel Aviv University**
For the academic year 2011-2012
- 2012** **Alix De Rothschild Fund for Scholarships in Science and Technology**
Research prize for 2011-2012
- 2012** **Anne and Maurice Cohen Teaching Excellence Prize**
School of physics and Astronomy, Tel Aviv University
- 2011** **Shulamit Goldhaber Research Excellence Prize**
School of physics and Astronomy, Tel Aviv University

6. Supervision of Students and Postdocs

Postdocs

1. **Dr. Johannes Knaute**, 2/2022 –
Won the Excellence Fellowship for International Postdoctoral Researchers of the Israel Academy of Sciences and Humanities
2. **Dr. Tsafrir Armon**, 12/2020 – 9/2021

PhD Students

1. **Shachar Ashkenazi**, 1/2021 –
2. **Ariel Kelman**, 10/2021 –
3. **Guy Pardo**, 2/2022 –
Jointly with Prof. Nadav Katz
4. **Patrick Emonts**,
Visiting PhD student from the Max Planck Institute of Quantum Optics (MPQ), 2020
Co-supervised at MPQ, 2017-2019
5. **Julian Bender**,
Visiting PhD student from the Max Planck Institute of Quantum Optics (MPQ), 2020
Co-supervised at MPQ, 2017-2019

Master Students

1. **Tomer Greenberg**, 3/2021 –
2. **Matan Feuerstein**, 3/2022 –
3. **Julian Bender**, 10/2016-10/2017, MPQ, co-supervised at MPQ
Digital Quantum Simulation of Lattice Gauge Theories
Grade: 1.0 (highest)
4. **Ilya Kull**, 10/2016-9/2017, MPQ, co-supervised at MPQ
Classification of Matrix Product States with a Local (Gauge) Symmetry
Grade: 1.0 (highest)
5. **Daniel González Cuadra**, 10/2015-9/2016, MPQ, co-supervised at MPQ
Quantum Simulation of Abelian Lattice Gauge Theories with Ultracold Atoms
Grade: 1.0 (highest)

7. Teaching

- **Quantum Information Methods for Many Body Physics** (Spring 2020, Spring 2021, Spring 2022, Spring 2023) – a course developed by me, on quantum simulation and tensor networks.
- **Quantum Computation for Physicists** (Fall 2021-2, Fall 2022-3) – a course developed by me, teaching the basics of quantum computing from a physical (rather than computer science) perspective

8. Other Academic and Scientific Work

- Peer review:
 - Nature
 - Physical Review Letters
 - Physical Review X
 - Physical Review X Quantum
 - Physical Review A
 - Physical Review D
 - Review of Modern Physics
 - Philosophical Transactions of the Royal Society A
 - Nature Communications
 - SciPost
 - New Journal of Physics
 - Journal of High Energy Physics
 - Annals of Physics
 - Physics Letters B
 - Quantum
- Conference and Workshop Organization:
 - **MPQ Theory Group Workshop**, Lenggries, Germany, June
 - **Quantum Simulation of Strong Interactions (QuaSI) Workshop 1: Theoretical Strategies for Gauge Theories**, InQubator for Quantum Simulation, University of Washington, Seattle, USA, April 2021 (online)
 - **Quantum Simulation of Strong Interactions (QuaSI) Workshop 2: Implementation Strategies for Gauge Theories**, InQubator for Quantum Simulation, University of Washington, Seattle, USA, May 2021 (online)
 - **Annual Retreat of the Hebrew University Quantum Information Center**, Ein Gedi, Israel, July 2021
 - **Discrete lattice gauge theories- emergence and quantum simulations**, MCQST workshop, MPQ, Garching, Germany, May 2022 (planned)
- Scientific Journal Editing:
 - Guest Editor of the special issue **Quantum Technologies in Particle Physics** of the journal **Philosophical Transactions of the Royal Society A**, published in February 2022.
- Seminar Organization:
 - **Hebrew University Quantum Center (HUQ) Seminar**, 2022 –
 - **Many Body Theory Seminar**, MPQ, 2018 – 2019
 - **Quantum Seminar**, Tel Aviv University, 2012-2013
- Advisory board member, International AIQT (Artificial Intelligence and Quantum Technology) foundation, Chur, Switzerland

9. Conferences, Workshops, Seminars, Research Visits

Invited participation in conferences and workshops

- 1) March 2014 **COST action MP1006 on Fundamental Problems in Quantum Physics**
Weizmann Institute, Rehovot, Israel

 Invited Talk: **Simulation of Dynamic Abelian and Non-Abelian Gauge Theories with Ultracold Atoms**

- 2) June 2015 **Cold Atoms meet High Energy Physics**
ECT*, Trento, Italy

 Invited Key Talk: **Quantum Simulation of Lattice Gauge Theories using Ultracold Atoms**

- 3) June-July 2016 **Humboldt Kolleg: From the Vacuum to the Universe**
Kitzbühel, Austria

 Invited Talk: **Projected Entangled Pair States (PEPS) and Local (Gauge) Symmetries**

- 4) Aug.-Sept. 2016 **Quantum Gases and Quantum Coherence: BEC2016**
University of Salerno, Italy

 Invited Talk: **Quantum Simulation of Lattice Gauge Theories with Ultracold Atoms in Optical Lattices**

- 5) December 2016 **632 Heraeus-Seminar – Gauge Field Dynamics with Ultracold Gas Systems**
Physikzentrum Bad Honnef, Germany

 Invited Talk: **Quantum Simulation of Lattice Gauge Theories with Ultracold Atoms in Optical Lattices**

- 6) May-June 2017 **From Static to Dynamical Gauge Fields with Ultracold Atoms**
Galileo Galilei Institute, Florence, Italy

 Invited Talk: **Quantum Simulation of Lattice Gauge Theories with Ultracold Atoms in Optical Lattices**

- 7) October 2017 **Quantum Cup, Joint MPQ-Freiburg workshop**
MPQ, Garching, Germany

 Invited Talk: **Digital Lattice Gauge Theories**

- 8) January 2018 **Inauguration Ceremony of the Max Planck Harvard Research Center for Quantum Optics**
Garching and Munich, Germany

 Invited Talk: **Gauge Symmetries with Cold Atoms and PEPS: Quantum Simulation and Tensor Network Studies of Lattice Gauge Theories**

- 9) March 2018 **NPQI 2018 – Intersections between Nuclear Physics and Quantum Information**
Argonne National Lab, Argonne, Illinois, USA, March 2018
- Invited Talk: **Quantum Simulation of Lattice Gauge Theories with Ultracold Atoms**
- Participation in a Discussion Panel
- 10) June 2018 **Entanglement in Quantum Systems – Tensor Networks Focus Week**
Galileo Galilei Institute, Florence, Italy
- Invited Lectures (2 session adding up to 3 hours): **PEPS and local (gauge) symmetries**
- 11) September 2018 **Quantum Entanglement at Collider Energies**
Center for Frontiers in Nuclear Science, Stony Brook University, NY, USA
- Invited Talk: **PEPS with Gauge Symmetries: Tensor Network Studies of Lattice Gauge Theories**
- 12) September 2018 **Next steps in Quantum Science for HEP Theory**
Fermilab, IL, USA
- Invited Talk: **Tensor Network and Cold Atoms Methods for Lattice Gauge Theories**
- 13) March 2019 **Tensor Networks from Simulation to Holography II**
DESY, Zeuthen, Germany
- Invited Talk: **PEPS with a local (gauge) symmetry – studying lattice gauge theories with tensor networks in $d > 1+1$**
- 14) June 2019 **High-energy physics at ultra-cold temperatures**
ECT*, Trento, Italy
- Invited Key Talk: **Quantum Simulation of Gauge Theories with Cold Atoms**
- 15) June 2019 **Humboldt Kolleg: Discoveries and Open Puzzles in Particle Physics and Gravitation**
Kitzbühel, Austria
- Invited Talk: **Quantum Simulation and Tensor Networks Methods for Gauge Theories with Cold Atoms**
- 16) October 2019 **Collaboration Kick-Off Meeting of the HUJI QI Center & IQOQI Vienna**
IQOQI, Vienna, Austria
- Invited Talk: **Studying Quantum Field Theories with Quantum Information and Simulation**

- 17) March 2020 **Fritz Haber Symposium**
Hebrew University, Jerusalem, Israel
- Invited Talk: **Studying Quantum Field Theories with Quantum Information and Simulation**
- 18) February 2020 **Entanglement in Strongly Correlated Systems**
Benasque, Spain
- Invited Talk: **Absorbing Fermionic Statistics by Lattice Gauge Fields and Eliminating the Fermions**
- 19) February 2020 **The Batsheva de Rothschild Seminar on Quantum Simulations using Photons, Atoms, and Molecules**
Tse'elim, Israel
- Invited Talk: **Quantum Simulation of Gauge Theories with Cold Atoms**
- 20) October 2020 **INT Online Program: Scientific Quantum Computing and Simulation on Near-Term Devices**
INT (Institute for Nuclear Theory), University of Washington, Seattle, WA USA
- Invited Talk: **Quantum Simulation of Lattice Gauge Theories in more than 1+1d: Challenges and Methods**
- 21) April 2021 **Quantum Simulation of Strong Interactions (QuaSI) Workshop 1: Theoretical Strategies for Gauge Theories**
InQubator for Quantum Simulation, University of Washington, Seattle, USA
- Invited Talk: **Absorbing fermionic statistics by lattice gauge fields and eliminating fermions**
- 22) May 2021 **Tensor Networks in Many Body and Quantum Field Theory**
INT (Institute for Nuclear Theory), University of Washington, Seattle, WA USA
- Invited Talk: **Gauged gaussian fermionic PEPS - studying Hamiltonian LGTs in more than 1+1d using tensor networks and Monte-Carlo**
- 23) July 2021 **Hebrew University Quantum Center Annual Retreat**
Ein Gedi, Israel
- Invited Talk: **Locally and Unitarily Mapping Lattice Fermions to Bosons in the Presence of a Gauge Field**
- 24) July 2021 **Tensor Networks: Quantum Physics, Geometry and Applications**
Levico Terme (Trento – organized by the BEC center), Italy
- Invited Talk: **Gauged gaussian fermionic PEPS - studying Hamiltonian LGTs in more than 1+1d using tensor networks and Monte-Carlo**

- 25) July 2021 **Tensor Networks in Many Body and Lattice Field**
Tsung-Dao Lee Institute, Shanghai Jiao Tong University, China
- Invited Talk: **Gauged gaussian fermionic PEPS - studying Hamiltonian LGTs in more than 1+1d using tensor networks and Monte-Carlo**
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- 26) October 2021 **5th Workshop on the QCD Structure of the Nucleon (QCD-N2021)**
Universidad de Alcala, Spain
- Invited Talk: **Gauged gaussian fermionic PEPS - studying Hamiltonian LGTs in more than 1+1d using tensor networks and Monte-Carlo**
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- 27) April 2022 **Simulating Quantum Many-Body Systems on Noisy Intermediate-Scale Quantum Computers (planned)**
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany
- Invited Talk: **Duality and Quantum Simulation**
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- 28) June 2022 **Clues to a mysterious Universe - exploring the interface of particle, gravity and quantum physics (planned)**
Kitzbühel, Austria
- Invited Talk: **Gauged gaussian fermionic PEPS - studying Hamiltonian LGTs in more than 1+1d using tensor networks and Monte-Carlo**
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- 29) June 2022 **Max Planck-Harvard Quantum Optics Research Center Alumni Conference**
Garching, Germany
- Invited Talk: **Selection rules and local constraints: my very own view on lattice gauge theories**
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- 30) September 2022 **Non-perturbative and numerical approaches to quantum gravity, string theory and holography**
Bangalore, India
- Invited Talk: **Quantum simulation of lattice gauge theories - requirements, challenges and methods**

31) September 2022 **Quantum simulations and algorithms with superconducting circuits**
Kfar Blum, Israel

Invited Talk: **Quantum simulation of lattice gauge theories - requirements, challenges and methods**

32) October 2022 **Tensor Networks: Mathematical Structures and Novel Algorithms**
Erwin Schroedinger Institute, Vienna, Austria

Invited Talk: **Gauged Gaussian Fermionic PEPS: a tool for studying lattice gauge theories**

Talks in Seminars and Colloquia

1) December 2011 **Particle Physics Seminar**
Tel Aviv University, Israel

Talk: **Confinement and Lattice QED Electric Flux Tubes Simulated with Ultracold Atoms**

2) December 2012 **Theoretical / Mathematical Physics Seminar**
Technion, Haifa, Israel

Talk: **Confinement and Lattice QED Electric Flux Tubes Simulated with Ultracold Atoms**

3) May 2013 **Particle Physics Seminar**
Ben-Gurion University, Beer Sheba, Israel

Talk: **Simulation of Dynamic Abelian and Non-Abelian Gauge Theories with Ultracold Atoms**

4) November 2013 **Particle Physics Seminar**
Tel Aviv University, Israel

Talk: **Quantum simulation of Abelian and Non-Abelian Lattice Gauge Theories using Ultracold Atoms**

5) April 2014 **Quantum Optics Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany

Talk: **Topological Wilson-loop area law manifested using a superposition of loops**

6) April 2014 **Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany

Talk: **Simulation of Dynamic Abelian and Non-Abelian Gauge Theories with Ultracold Atoms**

- 7) May 2014 **Quantum Optics Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany
- Talk: **Supersymmetric Quantum Mechanics**
- 8) September 2014 **Quantum Seminar**
Hebrew University, Jerusalem, Israel
- Talk: **Ultracold Atoms as Quantum Simulators for Dynamic Abelian and Non-Abelian Gauge Theories**
- 9) Nov.-Dec. 2014 **Quantum Optics Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany
- Three talks: **The Vacuum Polarization and QED Renormalization**
- 10) December 2014 **Particle Physics Seminar**
Tel Aviv University, Israel
- Talk: **Formulating Lattice Gauge Theories for Tensor Networks and Quantum Simulations**
- 11) January 2015 **Theoretical / Mathematical Physics Seminar**
Technion, Haifa, Israel
- Talk: **Formulating Lattice Gauge Theories for Tensor Networks and Quantum Simulations**
- 12) January 2015 **Condensed Matter Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany
- Talk: **Introduction to Lattice Gauge Theory**
- 13) Jan.-Mar. 2015 **Quantum Field Theory Course**
Max Planck Institute for Quantum Optics, Garching, Germany
- A series of weekly introductory lectures on Quantum Field Theory for the Theory Group at MPQ
- 14) May 2015 **Condensed Matter Seminar**
Harvard University, Cambridge, MA, USA
- Talk: **Formulating Lattice Gauge Theories for Quantum Simulations**
- 15) October 2015 **Quantum Optics Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany
- Talk: **Particle Oscillations and Symmetry Violation in the Weak Interactions**
- 16) December 2015 **Quantum Optics Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany
- Talk: **PEPS and Local (Gauge) Symmetries**

- 17) December 2015 **Condensed Matter Seminar**
Weizmann Institute, Rehovot, Israel

 Talk: **PEPS and Local (Gauge) Symmetries**
- 18) January 2016 **Condensed Matter Seminar**
Hebrew University, Jerusalem, Israel

 Talk: **PEPS and Local (Gauge) Symmetries**
- 19) September 2016 **Condensed Matter Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany

 Talk: **A Group Theory Approach to Lattice Gauge Theories**
- 20) October 2016 **Quantum Optics Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany

 Talk: **Gauge theories with ultracold atoms and tensor networks**
- 21) November 2016 **Condensed Matter Seminar**
Tel Aviv University, Israel

 Talk: **Gauge Theories with Cold Atoms and Tensor Networks**
- 22) November 2016 **Condensed Matter Seminar**
Hebrew University, Jerusalem, Israel

 Talk: **Gauge Theories with Cold Atoms and Tensor Networks**
- 23) November 2016 **Quantum Optics Seminar**
IQOQI, Innsbruck, Austria

 Talk: **Digital Lattice Gauge Theories**
- 24) November 2016 **Colloquium**
Max Planck Institute for Quantum Optics, Garching, Germany

 Talk: **PEPS with Local (Gauge) Symmetries**
- 25) March 2017 **Lewenstein Group Seminar**
ICFO, Castelldefels, Spain

 Talk: **PEPS with Local (Gauge) Symmetries**
- 26) May 2017 **Quantum Group Seminar**
University of Ghent, Ghent, Belgium

 Talk: **Gauging PEPS**
- 27) June 2017 **String Theory Journal Club**
Ludwig Maximilian University (LMU), Munich, Germany

 Talk: **PEPS with Local (Gauge) Symmetries**

- 28) August 2017 **AMO Seminar**
Weizmann Institute, Rehovot, Israel
- Talk: **Quantum Simulation of Lattice Gauge Theories: from Analog to Digital**
- 29) November 2017 **Condensed Matter Seminar**
Hebrew University, Jerusalem, Israel
- Talk: **Quantum Simulation of Lattice Gauge Theories: from Analog to Digital**
- 30) November 2017 **AMO Seminar**
Weizmann Institute, Rehovot, Israel
- Talk: **Gauging PEPS: Constructing and Studying Tensor Networks with Local Gauge Invariance**
- 31) November 2017 **Particle Physics Seminar**
Tel Aviv University, Israel
- Talk: **Gauging PEPS: Constructing and Studying Tensor Networks with Local Gauge Invariance**
- 32) July 2018 **INT Seminar**
Institute for Nuclear Theory, University of Washington, USA
- Talk: **PEPS with Gauge Symmetries: Tensor Network Studies of Lattice Gauge Theories**
- 33) September 2018 **IQI Seminar**
IQIM, Caltech, Pasadena, USA
- Talk: **Tensor Network and Cold Atoms Methods for Lattice Gauge Theories**
- 34) October 2018 **Many Body Theory Seminar**
Max Planck Institute for Quantum Optics, Garching, Germany
- Talk: **Eliminating fermionic matter fields in lattice gauge theories**
- 35) November 2018 **Seminar**
Johannes Gutenberg University, Mainz, Germany
- Talk: **Tensor Networks and Quantum Simulation Methods for Lattice Gauge Theories**
- 36) November 2019 **SynQS Seminar**
Kirchoff Insitute for Physics, Heidelberg, Germany
- Tutorial: **Introduction to non-Abelian Gauge Theories**

- 37) December 2019 **Condensed Matter Theory Seminar**
Technical University of Munich (TUM), Garching, Germany

Talk: **Eliminating fermions in lattice gauge theories**
- 38) April 2020 **Theory Seminar**
Theory Division, Max Planck Institute of Quantum Optics, Garching, Germany

Talk: **Absorbing fermionic statistics by lattice gauge fields and eliminating fermions**
- 39) July 2020 **Tensor Networks in High Energy Physics Online Lecture Series**
Albert Einstein Institute, Potsdam, Germany

Invited Talk: **Absorbing fermionic statistics by lattice gauge fields and eliminating fermions**
- 40) March 2021 **ICFO Seminar**
ICFO, Castelldefels, Spain

Talk: **Absorbing fermionic statistics by lattice gauge fields and eliminating fermions**
- 41) March 2021 **High Energy Theory Seminar**
Tel Aviv University, Israel

Talk: **Absorbing fermionic statistics by lattice gauge fields and eliminating fermions**
- 42) November 2021 **Quantum Group Seminar**
University of Ghent, Ghent, Belgium

Talk: **Approximating Relativistic Quantum Field Theories with Continuous Tensor Networks**
- 43) December 2021 **Tensor Networks in High Energy Physics Online Lecture Series**
Albert Einstein Institute, Potsdam, Germany

Invited Talk: **Gauged gaussian fermionic PEPS - studying Hamiltonian LGTs in more than 1+1d using tensor networks and Monte-Carlo**

Contributed talks at workshops and conferences

- 1) October 2012 **Workshop on Quantum Simulations**
UPV/EHU, Bilbao, Spain

Talk: **Simulation of Dynamic Abelian and Non-Abelian Gauge Theories with Ultracold Atoms**
- 2) June 2013 **Relativistic Quantum Information 2013 North**
University of Nottingham, UK

Talk: **Simulation of Dynamic Abelian and Non-Abelian Gauge Theories with Ultracold Atoms**
- 3) November 2014 **MPQ Theory Group Workshop**
Passau, Germany

Talk: **Formulating Lattice Gauge Theories for Quantum Simulations**
- 4) May 2015 **New Trends in Complex Quantum Dynamics**
Cartagena, Spain

Talk: **Formulating Lattice Gauge Theories for Quantum Simulations**
- 5) July 2015 **Central European Workshop on Quantum Optics 2015**
Warsaw, Poland

Talk: **Quantum Simulations of Lattice Gauge Theories using Ultracold Atoms**
- 6) May 2016 **MPQ Theory Group Workshop**
Oetz, Austria

Talk: **Gauge Symmetries with Cold Atoms and PEPS**
- 7) July 2016 **Quantum Science: Implementations 2016**
Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain

Tutorial: **Quantum Simulation of Lattice Gauge Theories: an introduction**
- 8) September 2016 **Humboldt Colloquium – Bridges to the Future: German-Israeli Scientific Relations**
Tel Aviv University, Israel

Talk: **Gauge Theories with Tensor Networks and Ultracold Atoms**
- 9) February 2017 **Quantum Methods for Lattice Gauge Theories Calculations**
Schloss Waldthausen (Mainz Institute for Theoretical Physics), Germany

Talk: **PEPS with Local (Gauge) Symmetries**

10) May 2017

New Trends in Complex Quantum Dynamics
Cartagena, Spain

Talk: **Projected Entangled Pair States (PEPS) and Local (Gauge) Symmetries**

11) June 2017

MPQ Theory Group Workshop
Lenggries, Germany

Talk: **Quantum Methods for Lattice Gauge Theories: What, When, Where, Why and Who**

12) October 2018

MPQ Theory Group Workshop
Nördlingen, Germany

Talk: **Lattice Gauge Theories in the Quantum Info Era**

13) October 2020

IOP QUANTUM 2020
Virtual Conference

Talk: **Locally and Unitarily Mapping Lattice Fermions to Bosons in the Presence of a Gauge Field**

Further Conferences and Workshops Attended

1) October 2009

50 Years of the Aharonov-Bohm Effect
Tel Aviv University, Israel

2) December 2009

Physical Implementations of Quantum Computing
Yad Hashmona, Israel

3) April 2010

QION 10 – Workshop on Quantum Information and Quantum Dynamics in Ion Traps
Tel Aviv, Israel

4) November 2010

Minerva-Weizmann Workshop on Entanglement in Atomic Systems
Weizmann Institute, Israel

5) September 2011

Workshop on Quantum Field Theory Aspects of Condensed Matter Physics
LNF, Frascati, Italy

6) March 2012

QION 12 – Workshop on Quantum Information and Quantum Dynamics in Ion Traps
Tel Aviv, Israel

7) May 2013

Workshop on Quantum Simulations and Related Topics on the Occasion of the Award of the Wolf Prize to Peter Zoller and Ignacio Cirac
Technion, Israel

8) July 2013

Summer Programme on Synthetic Gauge Fields for Photons and Atoms
BEC center, Trento, Italy

- 9) June 2014 **Second Kavli-MPQ workshop**
Max Planck Institute for Quantum Optics, Garching, Germany
- 10) July 2014 **Quantum Science: Implementations 2014**
Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain
- 11) February 2016 **Quantum Simulation with Cold Matter and Photons**
Solvay Institute, Brussels, Belgium