Erez Zohar – Curriculum Vitae, January 26, 2024

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

1/2024 – **Associate Professor**
Racah Institute of Physics
Hebrew University of Jerusalem
Jerusalem, Israel

7/2019 – 1/2024 **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 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

2024 – 2029	**ERC Consolidator Grant** – OverSign – Overcoming the Sign Problem in Lattice Gauge Theories
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

2023	**Vigevani Research Project Prize**
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. Gertian Roose**, 9/2023 –

2. **Dr. Umberto Borla**, 1/2023 –
   Won the Excellence Fellowship for International Postdoctoral Researchers of the Israel Academy of Sciences and Humanities

3. **Dr. Johannes Knaute**, 2/2022 – 1/2024
   Won the Excellence Fellowship for International Postdoctoral Researchers of the Israel Academy of Sciences and Humanities

4. **Dr. Tsafrir Armon**, 12/2020 – 9/2021

PhD Students

1. **Guy Pardo**, 2/2022 –
   Jointly with Prof. Nadav Katz.
   Won the Israeli Council of Higher Education Fellowship for PhD students in Quantum Technologies.

2. **Ariel Kelman**, 10/2021 –

3. **Patrick Emonts**,
   Visiting PhD student from the Max Planck Institute of Quantum Optics (MPQ), 2020
   Co-supervised at MPQ, 2017-2019

4. **Julian Bender**,
   Visiting PhD student from the Max Planck Institute of Quantum Optics (MPQ), 2020
   Co-supervised at MPQ, 2017-2019

Master Students

1. **Itay Gomelski**, 10/2024 –

2. **Jonathan Elyovitch**, 3/2023 –

3. **Emanuele Gaz**, 10/2022 –

4. **Matan Feuerstein**, 3/2022 – 12/2023

5. **Tomer Greenberg**, 3/2021 – 12/2022

6. **Julian Bender**, 10/2016-10/2017, MPQ, co-supervised at MPQ
   Digital Quantum Simulation of Lattice Gauge Theories
   Grade: 1.0 (highest)

7. **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)

8. **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 Computation for Physicists** (Fall 2021-2,Fall 2022-3, Fall 2023-4) – a course developed by me, teaching the basics of quantum computing from a physical (rather than computer science) perspective
- **Quantum Mechanics 1** (Spring 2024)
- **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.

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
  - Philoshopical Transactions of the Royal Society A
  - Nature Communcations
  - 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

- 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**

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**

27) April 2022 **Simulating Quantum Many-Body Systems on Noisy Intermediate-Scale Quantum Computers**
Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

Invited Talk: **Duality and Quantum Simulation**

28) June 2022 **Clues to a mysterious Universe - exploring the interface of particle, gravity and quantum physics**
Kitzbühel, Austria

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

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**

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**

33) November 2022 **Quantum Computing for Many-Body Problems: atomic nuclei, neutrinos, and other strongly correlated Fermi systems**
IJCLab, Orsay, France

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

34) April 2023 **Quantum Computing Methods for High Energy Physics**
MIAPbP, Garching, Germany

Invited Talk: **Tensor network methods for lattice gauge theories**

Member of a discussion panel: **Classical-simulation methods in HEP: what can they ultimately achieve and what is the limit?**

35) June 2023 **Nuclear and particle physics on a quantum computer: where do we stand now?**
ECT*, Trento, Italy

Invited Talk: **Quantum Simulation of Lattice Gauge Theories in more than 1+1 D**

36) July 2023 **3rd Plenary Meeting of the International Tensor Network**
TUM Akademiezentrum Raitenhaslach, Germany

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

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) Setpember 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) Decemer 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 Maximillian 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, Heidlberg, 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**

44) December 2022 **Hebrew University Quantum Center Seminar**
Hebrew University of Jerusalem, Israel

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

45) December 2022 **Physics Colloquium**
Haifa University, Israel

Invited Talk: **Quantum Information and Technology Methods for Lattice Gauge Theories**

46) June 2023 **Colloquium**
Ben Gurion University, Israel

Invited Talk: **Quantum Information and Technology Methods for Lattice Gauge Theories**

47) July 2023 **Condensed Matter Seminar**
Technion, Israel

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 2019 **IQOQI Vienna – HUJI Quantum Center Meeting**
IQOQI, Vienna

Talk: **Quantum Information and Optics for Quantum Field Theories**

14) 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) May2013 **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) Ferbruary 2016 **Quantum Simulation with Cold Matter and Photons**
Solvay Institute, Brussels, Belgium