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Personal data

Date of birth: 11 April 1986
Place of birth: Carini (Palermo), Italy
Nationality: Italian

Academic positions

2025-: Associate Professor (from July 1st, 2025)
2022-2025: Assistant Professor (Rita Levi-Montalcini Fellowship, RTDB), Department of Physics and Astronomy "Galileo Galilei", University of Padova (Italy)
2020-2022: Postdoc at IQOQI, Innsbruck (Austria). Group of P. Zoller.
2017-2020: Postdoc at Université Libre de Bruxelles, Bruxelles (Belgium). Group of N. Goldman.
2015-2017: Postdoc at INO-CNR BEC Center, Trento (Italy). Group of I. Carusotto.

Education

2023: Associate Professor habilitation in Fisica Teorica della Materia (FIS 02/B2)
2011-2015: **Ph.D. in Physics**, Utrecht University, the Netherlands
Thesis: *Quantum Phase Transitions in Low-Dimensional Optical Lattices.*
Advisor: Prof. Cristiane Morais Smith
2010-2011: Visiting student (master thesis), 6 months, Utrecht University
2010: Erasmus exchange program, 6 months, Utrecht University
2008-2010: **M.Sc. in Theoretical Physics** (highest mark), University of Catania, Italy
Thesis: *Finite-momentum Bose-Einstein condensates in optical lattices.*
Advisors: Prof. C. Morais Smith and Prof. V. Branchina
2005-2008: **B.Sc. in Physics** (highest mark), University of Catania, Italy
Thesis: *Josephson junctions and zero point energy: can we measure Dark Energy in the lab?*
Advisor: Prof. V. Branchina
2005-2010: Fellow of the "Scuola Superiore di Catania"^(*)
Diploma Thesis (highest mark): *Linear response theory and harmonic oscillators.*
Advisor: Prof. V. Branchina.

Grants

2023: PARD2023, Department of Physics and Astronomy, University of Padova. Project title: "Topology, Chirality and Interactions in Quantum Simulators". Funding: €60k.

Fellowships, scholarships and awards

2022: Full-time tenured research position (Ricercatore III livello) of the National Research Council (CNR), Italy. Position renounced.
2021: Rita Levi-Montalcini Tenure-Track Fellowship, Italian Ministry of Research, Funding: €210k, 3 years - accepted
Project Title: Higher-order Topological Insulators with Atoms and Photons
2020: FNRS postdoctoral Fellowship (Chargé de Recherche), Belgium, Funding: €168k, 3 years. Position renounced.
2019: Seal of Excellence for "Marie Skłodowska-Curie actions" individual proposal

^(*)The Scuola Superiore di Catania (SSC) is a special structure for higher education of the University of Catania based on the model of the Scuola Normale Superiore of Pisa. See also <http://www.scuolasuperiorecatania.it>.

- 2019: 3rd best speaker (€300) at the Young Speaker Contest
Annual Scientific Meeting of the Belgian Physical Society
- 2016: Best poster prize (€200) at WE-Heraeus-Seminar on “Ultracold Quantum gases -
Current Trends and Future Perspective”, Bad Honnef, Germany
- 2010: Scholarship for research and study abroad provided by the “Scuola Superiore di
Catania” covering 80% of the expenses up to € 5k
- 2008: Selected to participate in the Summer orientation courses of the Scuola Normale
Superiore of Pisa in San Miniato, Italy
- 2005-2010: Scholarship of the “Scuola Superiore di Catania”^(*) covering full board, lodging and
taxes during university studies

Research experience summary

- Metrics:* h-index 16, citations 1294 (source Google Scholar)
- Main interests:* Atomic quantum simulators, weakly- and strongly-correlated systems, Photonics
and atom-light interactions, Floquet driven systems, Topological states of matter, Flat
band physics, Lattice bound states
- Publications:* Author of **4 preprints** and **29 papers** published in peer-reviewed journals: Phys. Rev.
Lett. (4), Nature Communications (2), Nature Physics (1)
- Presentations:* Invited (12) and contributed (17) talks. Invited seminars (25). Posters (28).
- Conferences:* Attended conferences (67) and schools (4)
- Grant reviewer:* Department of Energy (DOE), USA; Humboldt foundation, Germany;
National Science Center, Poland
- Journal Referee:* Physical Review A/B/X/Letters, Science Advances, Nature Materials, Nature
Communications, Communications Physics, Advanced Photonics, Laser and
Photonics Review, NPJ Quantum Information, Light: Science and Applications, New
Journal of Physics, Quantum Science and Technology, Quantum, SciPost, APL
Photonics & others
- Referee awards:* IOP Trusted Reviewer status (2021, 2024)
- Research funds:* €438k (attracted)

Thesis supervision

- 2025, M.Sc.: G. Vicentini (ongoing), G. Bartolucci (ongoing)
- 2024, M.Sc.: G. Merlin, S. Di Spena (ongoing)
- 2023-, Ph.D.: M. Lanaro (ongoing); E. Tiburzi (co-supervision, ongoing)
- 2020, M.Sc.: M. Jamotte, *Interaction-induced strain for ultracold mixtures in optical lattices*, with Prof.
N. Goldman
- 2017, B.Sc.: S. Bresolin, *Zak phase in cold atoms*, with Prof. F. Dalfovo
- 2013, M.Sc.: T. Comparin, *Numerical study of the trapped and extended Bose-Hubbard models*, with
Prof. C. Morais Smith
- 2013, M.Sc.: D. Malpetti, *Phases and phase transitions in a shaken one-dimensional bipartite optical
lattices*, with Prof. C. Morais Smith

Teaching activity

Lecturer (L), Teaching Assistant (TA):

- 2025-: (L) *Introduction to Topological Phases of Matter*, Ph.D. in Physics
- 2022-: (L) *Quantum Information with Atoms and Photons*, M.Sc. in Physics of Data
- 2022-: (L) *Elementi di Fisica 2*, B.Sc. in Biomedical Engineering
- 2013-2015: (L) *Theoretical Physics Lab course on Bose-Einstein condensation*, University College
Utrecht. With Prof. C. Morais Smith
- 2015-2017: (TA) *Quantum Mechanics*, University of Trento
- 2012-2013: (TA) *Student Seminar*, Utrecht University
- 2011-2013: (TA) *Quantum Matter*, Utrecht University

Publications and preprints

Preprints:

4. Jing-Xin Liu, Giandomenico Palumbo, Marco Di Liberto, *Geometric Bloch oscillations and transverse displacement in flat band systems*, arXiv:2506.04314
3. Matija Tečer, Giuseppe Calajò, Marco Di Liberto, *Flat band mediated photon-photon interactions in 2D waveguide QED networks*, arXiv:2505.10623
2. Giuseppe Calajò, Matija Tečer, Simone Montangero, Pietro Silvi, Marco Di Liberto, *Many-body quantum dimerization in 2D atomic arrays*, arXiv:2504.07207
1. Gabriele Calliari, Marco Di Liberto, Hannes Pichler, Torsten V. Zache, *Quantum simulating continuum field theories with large-spin lattice models*, arXiv:2412.15325

Published:

29. Trideb Shit, Rishav Hui, Marco Di Liberto, Diptiman Sen, Seababrata Mukherjee, *Probing Two-body Bound States in the Continuum and Nonlinear Breathers Using Intensity Correlations*, Phys. Rev. A 111, 053515 (2025), arXiv:2402.18340
28. M. Burgher, M. Di Liberto, N. Goldman, I. Amelio, *Fate of chiral order and impurity self-pinning in flat bands with local symmetry*, Phys. Rev. B 111, 064514 (2025), arXiv:2410.01780
27. A. A. Stepanenko, M. Di Liberto, *Vortex bound states in dimerized π -flux optical lattices: characterization, state preparation and current measurement*, Phys. Rev. A (Letters) 110, L061304, arXiv:2410.06184
26. M. Ballarin, G. Cataldi, G. Magnifico, D. Jaschke, M. Di Liberto, I. Siloi, S. Montangero, P. Silvi, *Scalable digital quantum simulation of lattice fermion theories with local encoding*, Quantum 8, 1460 (2024), arXiv:2310.15091
25. M. Tečer, M. Di Liberto, P. Silvi, S. Montangero, F. Romanato, G. Calajò, *Strongly interacting photons in 2D waveguide QED*, Phys. Rev. Lett. 132, 163602 (2024), arXiv:2312.07668
24. N. Goldman, O. K. Diessel, L. Barbiero, M. Prüfer, M. Di Liberto and L. Peralta Gavensky, *Floquet-engineered nonlinearities and controllable pair-hopping processes: From optical Kerr cavities to correlated quantum matter*, PRX Quantum 4, 040327 (2023), arXiv:2304.05865
23. M. Jamotte, L. Peralta Gavensky, C. Morais Smith, M. Di Liberto and N. Goldman, *Quantized valley Hall response from local bulk density variations*, Communications Physics 6, 264 (2023), arXiv:2212.14054
22. M. Di Liberto and N. Goldman, *Chiral orbital order of interacting bosons without higher bands*, Phys. Rev. Research 5, 023064 (2023), arXiv: 2111.13572
21. A. Kruckenhauser, R. van Bijnen, T. V. Zache, M. Di Liberto, and P. Zoller, *High-dimensional SO(4)-symmetric Rydberg manifolds for quantum simulation*, Quantum Sci. Technol. 8 015020 (2023), arXiv: 2206.01108
20. M. Di Liberto, A. Kruckenhauser, P. Zoller and M. A. Baranov, *Topological phonons in arrays of ultracold dipolar particles*, Quantum 6, 731 (2022), arXiv: 2108.11856
19. M. Jamotte, N. Goldman and M. Di Liberto, *Strain and pseudo-magnetic fields in optical lattices from density-assisted tunneling*, Communications Physics 5, 30 (2022), arXiv: 2104.13394
18. M. Di Liberto, N. Goldman and G. Palumbo, *Non-Abelian Bloch oscillations in higher-order topological insulators*, Nature Communications 11, 5942 (2020), arXiv: 2007.00549
17. K. Wintersperger, C. Braun, F. N. Ünal, A. Eckardt, M. Di Liberto, N. Goldman, I. Bloch and M. Aidelsburger, *Realization of an anomalous Floquet topological system with ultracold atoms*, Nature Physics 16, 1058 (2020), arXiv:2002.09840

16. G. Salerno, G. Palumbo, N. Goldman and M. Di Liberto, *Interaction-induced lattices for bound states: Designing flat bands, quantized pumps and higher-order topological insulators for doublons*, Phys. Rev. Research 2, 013348 (2020), arXiv:1911.05057
15. M. Di Liberto, S. Mukherjee and N. Goldman, *Nonlinear dynamics of Aharonov-Bohm cages*, Phys. Rev. A 100, 043829 (2019), arXiv: 1810.07641
14. M. A. Gorlach, M. Di Liberto, A. Recati, I. Carusotto, A. N. Poddubny, C. Menotti, *Simulation of two-boson bound states using arrays of driven-dissipative coupled linear optical resonators*, Phys. Rev. A 98, 063625 (2018), arXiv: 1808.05989
13. S. Mukherjee, M. Di Liberto, P. Öhberg, R. R. Thomson, N. Goldman, *Experimental observation of Aharonov-Bohm caging in photonic lattices*, Phys. Rev. Lett. 121, 075502 (2018) (arXiv: 1805.03564) - Cover of Phys. Rev. Lett.
12. R. H. Chaviguri, T. Comparin, M. Di Liberto and M. A. Caracanhas, *Density-dependent hopping for ultracold atoms immersed in a Bose-Einstein-condensate vortex lattice*, Phys. Rev. A 97, 023614 (2018) (arXiv: 1711.10234)
11. G. Salerno, M. Di Liberto, C. Menotti and I. Carusotto, *Topological two-body bound states in the interacting Haldane model*, Phys. Rev. A 97, 013637 (2018), (arXiv: 1711.01272)
10. M. Di Liberto, A. Recati, N. Trivedi, I. Carusotto and C. Menotti, *Particle-hole character of Higgs and Goldstone modes in strongly-interacting lattice bosons*, Phys. Rev. Lett. 120, 073201 (2018) (arXiv: 1709.06575)
9. M. Di Liberto, A. Recati, I. Carusotto and C. Menotti, *Two-body bound and edge states in the extended SSH Bose-Hubbard model*, Eur. Phys. J. Special Topics 226, 2751 (2017) (arXiv:1612.02601)
8. M. Di Liberto, A. Recati, I. Carusotto and C. Menotti, *Two-body physics in the Su-Schrieffer-Heeger model*, Phys. Rev. A 94, 062704 (2016) (arXiv:1608.07341)
7. M. Di Liberto, A. Hemmerich and C. Morais Smith, *Topological Varma superfluid in optical lattices*, Phys. Rev. Lett. 117, 163001 (2016) (arXiv:1604.06055).
6. M. Di Liberto, T. Comparin, T. Kock, M. Ölschläger, A. Hemmerich, C. Morais Smith, *Controlling coherence via tuning of the population imbalance in a bipartite optical lattice*, Nature Communications 5, 5735 (2014) (arXiv:1412.4040).
5. M. Di Liberto, D. Malpetti, G. I. Japaridze, C. Morais Smith, *Ultracold fermions in a one-dimensional optical lattice: Metal-insulator transitions driven by shaking*, Phys. Rev. A 90, 023634 (2014) (arXiv:1405.4756).
4. M. Di Liberto, C. E. Creffield, G. I. Japaridze, C. Morais Smith, *Quantum simulation of correlated-hopping models with fermions in optical lattices*, Phys. Rev. A 89, 013624 (2014) (arXiv:1310.7959).
3. M. Di Liberto, O. Tieleman, V. Branchina, C. Morais Smith, *Finite-momentum Bose-Einstein condensates in shaken 2D square optical lattices*, Phys. Rev. A 84, 013607 (2011) (arXiv:1104.4350).
2. V. Branchina, M. Di Liberto, I. Lodato, *Mapping fermion and boson systems onto the Fock space of harmonic oscillators*, Phys. Rev. E 81, 011120 (2010) (arXiv:1001.3041).
1. V. Branchina, M. Di Liberto, I. Lodato, *Dark energy and Josephson junctions*, Journal of Cosmology and Astroparticle Physics (JCAP) 08 (2009) 011.

Other Publications:

2. M. Di Liberto, *Realization of Aharonov-Bohm cages in Photonic Lattices*, Belgian Physical Society Magazine 03/2019 (2019)
1. M. A. Gorlach, M. Di Liberto, A. Recati, I. Carusotto, C. Menotti, *Analogue simulation of two-body quantum dynamics with classical setup*, Journal of physics. Conference series 1092, 012045 (2018)

Organized Conferences

06/2025: Trends in Quantum Simulation of Gauge Fields and Topological Matter, 16-18 June 2025, Padova, Italy

- 09/2024: Topology and Correlations in Crystals and Quantum Matter: Workshop to Honor Prof. Morais Smith's 60th birthday, 08-13 September 2024, Les Houches, France
 10/2023: Quantum Computing and Simulation Workshop, 11-13 October 2023, Venice, Italy

Visits to research groups and Seminars

Invited Seminars are marked by (IS).

- 01/2025: IS Université Paris-Saclay & Laboratoire de Physique des Solides, Paris (France). Host: Andrej Mezaros – 1 day.
 Group Seminar: *Emergent orbital physics and chiral phases in dimerized pi-flux lattices*
- 09/2024: IS aMUSE General Meeting 17-19 September 2024, Padova Italy.
 Tutorial: *Quantum Simulation: overview and perspectives*
- 05/2023: IS Quantum Optics Group, Ludwig-Maximilians-Universität München (LMU), Munich, Germany. Host: Monika Aidelsburger – 1 day.
 Group Seminar: *Chiral orbital order of interacting bosons without higher bands*
- 11/2022: IS Institute of Theoretical Physics, Leibniz Universität Hannover, Hannover, Germany. Host: L. Santos. Group Seminar: *Topological phonons in arrays of ultracold dipolar particles* - Webinar
- 12/2021: IS Institute of Theoretical Physics and Astronomy, Vilnius University, Vilnius, Lithuania. Host: G. Juzeliunas. Joint Seminar: *Exploring topological effects in interacting systems of ultracold atoms* - Webinar
- 10/2021: IS Institute of Theoretical Physics, Utrecht University, Utrecht, the Netherlands. Host: C. Morais Smith. Condensed Matter Theory Seminar: *Non-Abelian Bloch Oscillations in Higher-Order Topological Insulators* - Webinar
- 11/2020: IS Department of Physics, Stevens Institute of Technology, Hoboken, New Jersey (USA). Host: Chunlei Qu. Group Seminar: *Linear and nonlinear Aharonov-Bohm caging* – Webinar
- 08/2020: IS Department of Physics, ITMO University, St. Petersburg, Russia. Host: Maxim Gorlach. Group Seminar: *Non-Abelian Bloch Oscillations in Higher-Order Topological Insulators* – Webinar
- 02/2020: IS Institute of Quantum Optics and Quantum Information (IQOQI), Academy of Sciences, Innsbruck, Austria. Host: Peter Zoller. Group Seminar: *Two-body topological bound states* – 2 days
- 02/2020: IS Arnold Sommerfeld Center, Ludwig Maximilian University, Munich, Germany. Host: F. Grusdt. Group Seminar: *Two-body topological bound states* – 1 day
- 11/2019: IS Department of Physics, University of Antwerp, Antwerp, Belgium. Host: H. Kurkjian. Group Seminar: *Linear and nonlinear Aharonov-Bohm caging* – 1 day
- 11/2019: IS Institute of Theoretical Physics, Utrecht University, Utrecht, the Netherlands. Host: C. Morais Smith. Group Seminar: *Two-body physics in topological models* – 1 day
- 06/2019: IS Quantum Optics Group, Ludwig-Maximilians-Universität München (LMU), Munich, Germany. Host: Monika Aidelsburger – 2 days.
 Group Seminar: *Linear and nonlinear Aharonov-Bohm caging*
- 06/2019: IS Quantum Optics Theory Group, Institute for Photonic Sciences (ICFO), Barcelona, Spain. Host: Maciej Lewenstein – 3 days
 Group Seminar: *Realization of Aharonov-Bohm cages in photonic lattices*
- 03/2019: IS Department of Physics, Penn State University, State College, USA. Host: Mikael Rechtsman – 2 days. Group Seminar: *Interplay between interactions and topology in few particles systems and p-band condensates*
- 03/2018: IS Institute of Quantum Optics and Quantum Information (IQOQI), Academy of Sciences, Innsbruck, Austria. Host: Peter Zoller – 4 days
 Quantum Optics Seminar: *Particle-Hole Character of the Higgs and Goldstone Modes in Strongly Interacting Lattice Bosons*

- 06/2017: – Institute of Photonics and Quantum Sciences, Heriot-Watt University, Edinburgh, Scotland. Host: P. Öhberg – 12 days
- 02/2017: IS Institute für Laserphysik, Universität Hamburg, Hamburg, Germany. Host: L. Mathey. Group Seminar: *Two-body physics in the SSH model* – 2 days
- 07/2016: IS Institute of Theoretical Physics, Utrecht University, Utrecht, the Netherlands. Host: C. Morais Smith
Strongly Correlated Systems Seminar: *Topological Varma superfluid* – 2 days
- 05/2015: IS University van Amsterdam, Amsterdam, the Netherlands. Host: P. Corboz
Group Seminar: *Tuning phase coherence in optical lattices* – 1 day
- 04/2015: IS Institute für Theoretische Physik, Universität Würzburg, Würzburg, Germany. Host: E. Hankiewicz
Mesoscopic Physics Seminar: *Tuning phase coherence in optical lattices* – 2 days
- 03/2015: IS INO-CNR BEC Center, Trento, Italy. Host: I. Carusotto
Group Seminar: *Tuning phase coherence in optical lattices* – 2 days
- 02/2015: IS Laboratoire de Physique des Solides, Université Paris-Sud, Orsay, France. Host: Mark Goerbig. Group seminar: *Tuning phase coherence in optical lattices* – 1 day
- 11/2014: IS Institute of Theoretical Physics, Leibniz Universität Hannover, Hannover, Germany. Host: L. Santos. Sonderseminar: *Controlling coherence via tuning of the population imbalance in a bipartite optical lattice* – 3 days
- 09/2014: IS Lorentz Institute for theoretical physics, Leiden, the Netherlands. Host: C. Beenakker
Group seminar: *Manipulating cold atoms with driving forces* – 1 day
- 05/2014: – Institute of Physics, Tbilisi State University, Tbilisi, Georgia.
Host: G.I. Japaridze – 10 days
- 11/2013: IS Nikhef TPP meeting, Amsterdam, the Netherlands.
Talk title: *Cold atoms in optical lattices* – 1 day
- 04/2012: – Institute für Laserphysik, Universität Hamburg, Hamburg, Germany.
Host: A. Hemmerich – 3 days

Conferences and workshops

Legend: (IT) Invited Talk; (CT) Contributed Talk; (P) Poster

- 10/2024: (CT) Workshop “Quantum Computing @ INFN”, 29 - 31 October 2024, Padova, Italy
Talk title: Quantum simulation of strongly-correlated vortex phases with atoms in optical lattices
- 09/2024: (P) Italian-German WE-Heraeus-Seminar on “Quantum Simulation with Ultracold Atoms”, 30 September - 02 October 2024, Florence, Italy
- 09/2024: (CT) Workshop “Topology and Correlations in Crystals and Quantum Matter: Workshop to honor Prof. C. Morais Smith’s 60th birthday”, 08 - 13 September 2024, Les Houches, France
Talk title: Quantum simulation: overview and perspectives
- 09/2024: (IT) Workshop “Quantum Optics meets Tensor Networks”, 4 - 5 September 2024, Bari, Italy
Talk title: Emergent orbital physics and chiral phases in dimerized pi-flux lattices
- 08/2024: (CT) Workshop “Collective Phenomena: From Out-of-Equilibrium Many-Body States to Bosonic Codes and Dynamical Gauge Fields”, 26 - 29 August 2024, Konstanz, Germany
Talk title: Emergent orbital physics and chiral phases in dimerized pi-flux lattices
- 02/2024: (CT) Workshop “Quantum Simulators of the Future: From Dynamical Gauge Fields to Lattice Gauge Theories”, 20 - 22 February 2024, Trieste, Italy
Talk title: Chiral orbital order of interacting bosons without higher bands
- 10/2023: (–) “Quantum Computing and Simulation Workshop”, 11 - 13 October 2023, Venice, Italy
- 09/2023: (CT) “IQIS 2023”, 18 - 22 September 2023, Trieste, Italy
Talk title: Simulation of chiral orbital order without higher bands
- 09/2023: (P) “Bose-Einstein Condensation 2023”, 09-15 September 2023, Sant Feliu de Guixols, Spain
- 07/2023: (P) WE-Heraeus-Seminar on “Applications of Ultracold Rydberg Gases”, 23 -28 July 2023, Bad Honnef, Germany

- 05/2023: (–) Workshop “*New Trends in Atomic Quantum Gases*”, 30-31 May 2023, Rome, Italy
- 03/2023: (P) *WE-Heraeus-Seminar on “Quantum Control of Light”*, 28 -31 Mar 2023, Bad Honnef, Germany
- 11/2022: (–) Workshop “*Celebrating 20 years of the Trento Center on Bose-Einstein Condensation*”, 02-03 November 2022, Trento, Italy
- 08/2022: (–) Solvay Workshop on Physics “*Quantum Information 2021*”, 29 - 31 August 2022, Bruxelles, Belgium
- 08/2022: (IT) Workshop “*Modern Concepts of Topological and Quantum Photonics*”, 01 - 03 August 2022, Rostock, Germany
Talk title: π -flux dimerized lattices: from orbital order to topological Bloch oscillations
- 05/2022: (–) Scientific secretary and auditor at the 28th Solvay Conference on Physics “*The Physics of Quantum Information*”, 19 - 21 May 2022, Bruxelles, Belgium
- 05/2022: (CT) “*FINESS conference*”, 02 - 06 May 2022, Sankt Martin, Germany
Talk title: Topological phonons in arrays of dipolar particles
- 04/2022: (P) *WE-Heraeus-Seminar on “Frontiers of Quantum Gas Microscopy”*, 03 -08 Apr 2022, Bad Honnef, Germany
- 11/2021: (P) *WE-Heraeus-Seminar on “Lattice-based Quantum Simulation”*, 28 Nov - 01 Dec 2021, online
- 09/2021: (IT) *Conference “Metanano 2021”*, 13-17 September 2021, online
Talk title: Non-Abelian Bloch oscillations in higher-order topological insulators
- 09/2021: (P) “*Bose-Einstein Condensation 2021*”, 12-16 September 2021, Sant Feliu de Guixols, Spain
- 06/2021: (CT) “*Conference on Lasers and Electro-Optics 2021 CLEO*”, 21-25 June 2021, online
Talk title: Non-Abelian Bloch Oscillations in Higher-Order TIs
- 06/2021: (IT) *KITP Program: Interacting Topological Matter: Atomic, Molecular and Optical Systems*, 01 June - 13 August 2021, online
Talk title: Non-Abelian Bloch Oscillations in Higher-Order TIs
- 06/2021: (P) *Conference “Topology meets Quantum Optics”*, 02-04 June 2021, online
- 04/2021: (IT&P) Workshop “*Korrelationstage 2021*”, 15-16/19-20 April 2021, online
Talk title: Topological Phases of Matter with Ultracold Atoms and Photons
- 01/2021: (–) *Conference “Many-body Physics in Open Quantum Systems”*, 21-22/28-29 January 2021, online
- 09/2020: (IT) *Conference “Metanano 2020”*, 14-18 September 2020, online
Talk title: Linear and nonlinear Aharonov-Bohm caging
- 05/2020: (–) Workshop “*Recent Developments on Multipole Moments in Quantum Systems*”, 11-12 May 2020, online
- 09/2019: (P) *Bose-Einstein Condensation 2019*, 8-13 September 2019, Sant Feliu de Guixols, Spain
- 07/2019: (CT) Workshop “*Designing Artificial Quantum Matter*”, 15-19 July 2019, Donostia-San Sebastián, Spain
Talk title: Linear and nonlinear Aharonov-Bohm caging
- 06/2019: (CT) “*Conference on Lasers and Electro-Optics 2019 CLEO*”, 27 June 2019, Munich, Germany
Talk title: Linear and nonlinear Aharonov-Bohm caging
- 06/2019: (IT) Workshop “*From Topology to Photonics and Beyond*”, 17-19 June 2019, Greifswald, Germany
Talk title: Linear and nonlinear Aharonov-Bohm caging
- 05/2019: (CT) *Annual meeting of the Belgian Physical Society*, 22 May 2019, Bruxelles, Belgium.
Talk title: Linear and nonlinear Aharonov-Bohm caging
- 04/2019: (P) Workshop *Condensed Matter Analogies in Mechanics, Optics and Cold Atoms*, 01-04 April 2019, Tel-Aviv, Israel
- 03/2019: (CT) *APS March meeting 2019*, 4-8 March 2019, Boston (Massachussets), USA
- 02/2019: (–) Workshop on “*Quantum Simulation*”, 18 - 21 February 2019, Brussels, Belgium
Talk title: Aharonov-Bohm cages in photonic lattices
- 07/2018: (P) *Humboldt Kolleg “Controlling quantum matter: From ultracold atoms to solids”*, 29 July - 02 August 2018, Vilnius, Lithuania

- 07/2018: (P) *International Conference on Atomic Physics ICAP2018*, 22-27 July 2018, Barcelona, Spain
- 06/2018: (IT) *Symposium on "Nanophotonics and metamaterials"*, 4-8 June 2018, St. Petersburg, Russia
Talk title: Two-body physics in topological models
- 04/2018: (P) *WE-Heraeus-Seminar on "Quantum Gases and Quantum Coherence"*, 15-18 April 2018, Bad Honnef, Germany
- 11/2017: (P) *Workshop on "Synthetic dimensions in quantum engineered systems"*, 20-23 November 2017, Zürich, Switzerland
- 05/2017: (P) *Workshop "From static to dynamical gauge fields"*, 21 May - 05 June 2017, Firenze, Italy
- 05/2017: (P) *Conference "Quantum fluids of light and matter"*, 8-12 May 2017, Cargèse (Corsica), France
- 10/2016: (IT) *Workshop "Correlations, integrability and criticality in quantum systems"*, 24-28 October 2016, Évora, Portugal
Talk title: Interplay between topology and interactions in the SSH model: a dynamical perspective
- 09/2016: (IT) *Workshop "Ultracold@Vilnius"*, 28 September 2016, Vilnius, Lithuania
Talk title: Topological Varma superfluid in optical lattices
- 09/2016: (IT) *Workshop "BEC2016: Quantum gases and quantum coherence"*, 03 September 2016, Salerno, Italy
Talk title: Topological Varma superfluid
- 05/2016: (P) *WE-Heraeus-Seminar on "Ultracold Quantum gases - Current Trends and Future Perspective"*, 09 - 13 May 2016, Bad Honnef, Germany
- 04/2016: (-) *Workshop on "Topodays 2016: Topological effects in Photonics"*, 18 - 20 April 2016, Trento, Italy
- 03/2016: (P) *Conference "Frontiers in Ultracold Fermi Gases"*, 21 - 23 March 2016, Florence, Italy
- 02/2016: (P) *Workshop on "Quantum Simulation with Cold Matter and Photons"*, 08 - 11 February 2016, Brussels, Belgium
- 01/2016: (IT) *Workshop "Ultracold Quantum Matter"*, 11 January 2016, Padova, Italy
Talk title: Controlling phase coherence in optical lattices
- 10/2015: (-) *Workshop "Topological effects and synthetic gauge/magnetic fields for atoms and photons"*, 29 September - 01 October 2015, Zagreb, Croatia
- 03/2015: (CT) *APS March meeting 2015*, 2-6 March 2015, San Antonio (Texas), USA
Talk title: Controlling coherence via tuning of the population imbalance in a bipartite optical lattice
- 01/2015: (CT) *Physics@FOM*, 20-21 January 2015, Veldhoven, the Netherlands
Talk title: Driven Fermi gases in optical lattices
- 11/2014: (CT) *Quantum correlations out of equilibrium*, 5-7 November 2014, Zurich, Switzerland
Talk title: Quantum simulation with driven Floquet systems
- 05/2014: (P) *BEC 2014, Theory of Quantum Gases and Quantum Coherence*, 28-31 May 2014, Levico Terme, Italy
- 03/2014: (CT) *APS March meeting 2014*, 3-7 March 2014, Denver (Colorado), USA
Talk title: Quantum simulation of correlated-hopping models with fermions in optical lattices
- 01/2014: (P) *Physics@FOM*, 21-22 January 2014, Veldhoven, the Netherlands
- 09/2013: (P) *Bose-Einstein Condensation 2013 - Frontiers in Quantum Gases*, 7-13 September 2013, Sant Feliu de Guixols, Spain
- 01/2013: (-) *Pushing the boundaries with cold atoms*, 27 January - 09 February 2013, Stockholm, Sweden
- 01/2013: (P) *Physics@FOM*, 22-23 January 2013, Veldhoven, the Netherlands
- 07/2012: (P) *Quantum Simulations with Ultracold Atoms*, 16-20 July 2012, Trieste, Italy
- 06/2012: (P) *BEC 2012, Theory of Quantum Gases and Quantum Coherence*, 5-8 June 2012, Lyon, France
- 01/2012: (P) *Physics@FOM*, 17-18 January 2012, Veldhoven, the Netherlands
- 03/2012: (CT) *Young Atom Opticians 2012*, 26-30 March 2012, Kraków, Poland

Talk title: Finite-momentum Bose-Einstein condensates in shaken 2D square optical lattices

05/2011: (P) *Trends in Theory 2011, 9th biennial symposium of the Dutch Research School of Theoretical Physics, 19-20 May 2011, Dalfsen, the Netherlands*

01/2011: (-) *Physics@FOM, 18-19 January 2011, Veldhoven, the Netherlands*

Schools

03/2014: *DRSTP Postgraduate AIO/OIO School Statistical Physics and Theory of Condensed Matter (SPTCM), 10-21 March 2014, Doorn, the Netherlands*

03/2013: *DRSTP Postgraduate AIO/OIO School Statistical Physics and Theory of Condensed Matter (SPTCM), 4-15 March 2013, Doorn, the Netherlands*

(CT) Contributed Talk title: η -pairing superconductivity in optical lattices

07/2012: *Quantum Many-Body Physics of Ultra-Cold Atoms and Molecules, 2-13 July 2012, Trieste, Italy*

07/2011: *Quantum Phenomena in Graphene, other Low-Dimensional Materials, and Optical Lattices, Majorana Center, 26 July - 7 August 2011, Erice, Italy*

Dissemination talks

05/2024: *Pint of Science (Padova)*

Talk title: L'era della Simulazione Quantistica

(Last update: June 19, 2025)