

Curriculum Vitæ

Philipp Hans-Jürgen Hauke

Via A. Tambosi 53/1, 38123 Villazzano (TN), Italy
philipp.hauke@unitn.it
ORCID 0000-0002-0414-1754, researcher-ID H-5304-2015
<https://scholar.google.de/citations?hl=de&user=jBizE68AAAAJ>



PERSONAL INFORMATION

Born March 26, 1983 in Munich, Germany
Married, father of twins

RESEARCH INTERESTS

My group currently consists of 5 PhD students, 2 Postdocs, and 1 Master student. We investigate:

- Synthetic quantum systems
- Novel quantum technologies (qu. simulation, qu. computing, qu. annealing, qu. metrology...)
- Strongly-correlated systems, quantum non-equilibrium dynamics

Highlights: A large number of my proposals have been realized experimentally, especially in trapped-ion quantum computers and cold atomic gases, enabling breakthrough investigations into quantum transport, entanglement dynamics, magnetic and topological phases of matter, as well as gauge theories. I am one of the inventors of the so-called LHZ architecture for gauge quantum annealers, and I have co-authored reviews on quantum simulators and quantum annealing.

CAREER and EDUCATION

Since 11/2019	Associate Professor, INO-CNR BEC Center and Department of Physics University of Trento, Italy
3/2017 – 10/2019	Group Leader, Kirchhoff-Institute for Physics and Institute for Theoretical Physics Heidelberg University, Germany
10/2012 – 2/2017	Postdoc (Junior Scientist, University Assistant, and Senior Scientist) with P. Zoller, University of Innsbruck, Austria
3/2009 – 4/2013	PhD thesis under supervision of M. Lewenstein ICFO – The Institute of Photonic Sciences, Castelldefels (Barcelona), Spain Graded <i>cum laude</i> with honors (best possible grade)
1/2008 – 1/2009	Diploma thesis under supervision of J.I. Cirac Max-Planck Institute of Quantum Optics and Technical University of Munich, Germany Graded 1.0 with distinction (best possible grade)
10/2003 – 1/2009	Studies of Physics at Technical University of Munich, Germany and Swiss Federal Institute of Technology, Lausanne, Switzerland
2002	Abitur at Max-Planck-Gymnasium Munich, Germany; Graded 1.0 (best possible grade)

AWARDS and SCHOLARSHIPS

- Young Scientist Prize in Atomic, Molecular and Optical Physics of IUPAP, the International Union of Pure and Applied Physics (2020)
- ICFO PhD Thesis Award (2014)
- Finalist DAMOP Thesis Prize of the American Physical Society (2014)
- Finalist SAMOP Thesis Prize of the German Physical Society (2014)
- Honourable mention of the Václav Votruba Prize for the best thesis in theoretical physics (2013)
- First TOQATA Prize of the National Plan Grant (2012)
- Scholarship of the Studienstiftung des deutschen Volkes, e.V. (8/2006-1/2009)

PUBLICATIONS and TALKS

<i>h-index</i>	27, 3685 total citations (researcherID per September 25, 2020) 31, 5747 total citations (Google Scholar per September 25, 2020)
<i># of articles</i>	59 journal articles and preprints (49 peer reviewed) Among these 3 Nature, 1 Science, 4 Nat. Phys., 2 Sci. Adv., 12 Phys. Rev. Lett., 1 Phys. Rev. X, 3 Rep. Prog. Phys., 2 invited comments (Science, Viewpoint in Physics)
<i>Recognitions of articles</i>	1 Breakthrough of the Year, 8 APS Editors' suggestions, 2 Cover stories, 1 Best Paper Award of the ÖAW, 1 Eduard Wallnöfer Prize, 4 Viewpoint in Physics, 1 Physical Review Focus, 1 News & Views, 1 IOPSelect
<i>Talks</i>	6 colloquia, 44 invited talks, and 22 other talks

THIRD PARTY FUNDING

11/2018 – 10/2023	ERC Starting Grant (€ 1,500,000) Project: StrEnQTh – Strong Entanglement in Quantum Many-body Theory
9/2020 – 8/2023	BMW project EnerQuant: Energiewirtschaftliche Fundamentalmodellierung mit Quantenalgorithmen (Associated partner)
11/2019 – 10/2022	Q@TN (funding for a 3 Yr PhD student) Project: PhoQuaSDyn – Photonic Quantum Simulations of Dynamical Gauge Fields
7/2020 – 4/2021	CINECA HPC project ISCRA Class C: ISSYK - HP10CE3PVN
11/2017 – 10/2019	Excellence initiative “Frontier”, Heidelberg University (€ 85,200) Project: Simulating high-energy physics in small atomic systems
3/2017 – 10/2019	DFG Collaborative Research Center 1225 ISOQUANT (€ 69,900 p.a.) Project: Cold-atom gauge theories

Member or associate of Italian National Research Council (CNR), Q@TN, CRC 1225 Isoquant, and the German Physical Society.

PATENT APPLICATION

Quantum Processing Device and Method, European Patent Application, filing date June 29th, 2015
Applicants: University of Innsbruck and Austrian Academy of Sciences
Inventors: W. Lechner, P. Hauke, and P. Zoller

TEACHING and COMMUNITY SERVICE

Lectures on Quantum Computing, Quantum Information, Cold Atoms, and Quantum Technologies.

Master seminars on Entanglement, Quantum Optics, and Quantum Information.

Exercise classes on Mathematical Methods, and Classical Mechanics, *experiments* in basic lab course.

Member of the Academic Board of the PhD, Department of Physics, University of Trento.

Regular Reviewer for Nature, Nature Phys., Nature Commun., PRX, PRL, NJP, various specialized journals, and for various international funding agencies. IOP trusted reviewer and *Outstanding referee commendation* from New J. Phys.

Organizer of Conference QSEC (9/2019), CQD Colloquium series (2018-19), Heidelberg University, and of online seminar series “Quantum Simulation for Nuclear Physics (QS4NP)”.