Viktoria Noel

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Institute for Theoretical Physics,
Auf der Morgenstelle 14,
72076 Tübingen, Germany

RESEARCH EXPERIENCE

Oct 2025 – **Postdoctoral researcher, University of Tübingen, Germany**
Institute for Theoretical Physics, Group of Igor Lesanovsky

June 2025 – Oct 2025 **Postdoctoral researcher, Heidelberg University, Germany**
Institute for Theoretical Physics, Group of Jürgen Berges

June 2025 – July 2025 **Visiting researcher, The University of Tokyo, Japan**
Department of Physics, Group of Kenji Fukushima

ACADEMIC TRAINING

May 2021 – May 2025 **PhD in Physics, Heidelberg University, Germany**
PhD Thesis "Far-from-equilibrium universality and dynamics of nonequilibrium quantum many-body systems", defense date: 07/05/2025
Supervisor: Jürgen Berges

Oct 2019 – Jan 2021 **MSc Physics (Distinction), Imperial College London, England**
MSc Thesis: "Renormalisation of Wilson-Hubbard matter"
Supervisor: Dimitri Vvedensky

Sept 2016 – July 2019 **BA Physics (First Class), University of Oxford, England**
BA Thesis: "Investigation of cryostats for nanoscience"
Supervisor: Tristan Farrow

AWARDS & DISTINCTIONS

2019 Open Scholarship (£300) and School's Prize for academic achievements

2019 Physics Prize for the Bachelor of Arts Thesis on cryostats for nanoscience

2018 Commendation for Laboratory Practical Work

2016–2019 Moritz-Heyman Scholarship (£18000 towards tuition fees & £4000 internship fund)

TEACHING

Lecture courses

WS 2026 Many-Body Quantum Optics (University of Tübingen)

Tutoring

2025 – 2026 Condensed Matter Field Theory, Advanced Statistical Physics (University of Tübingen)

2021 – 2023 Quantum Field Theory I & II (Heidelberg University)

MENTORING

Oct 2026 – M. Reiner (BSc): Topological phase transitions in long-range interacting spin systems

May 2026 – I. Bürck (MSc): Topological invariants in far-from-equilibrium Rydberg gases

Nov 2025 – M. Jirasek (MSc): Keldysh approach to the quantum Fisher information

Oct 2024 – Oct 2025 C. Schmitt (MSc): Nonperturbative nonequilibrium dynamics with initial correlations

Feb 2024 – Feb 2025 V. de Jonge (MSc): Dynamical scaling, topology, and phases in nonthermal systems

MANAGEMENT

Organisation of seminars/workshops

05–07 Apr 2027 *"DISQO - Dynamics in Strongly Correlated Quantum Open Systems"* Workshop (University of Tübingen)

17 Feb & 27 June 2024 Special seminars *"Coffee, cake and TDA"* (Mathematikon, Heidelberg University)

19–21 Sept 2023 4th workshop on Topological Methods in Data Analysis *"Synergies between TDA and Life Sciences"* (Mathematikon, Heidelberg University)

Oct 2022–Oct 2025 *Cold Quantum Coffee* weekly seminar series (Institute for Theoretical Physics, Heidelberg University)

Additional roles

Feb 2024–Oct 2025 Steering board and Diversity, Equity & Inclusion committee member of the collaborative research centre SFB 1225 *IsoQuant* (Heidelberg University)

2018–2019 Student ambassador at St Edmund Hall (University of Oxford)

TALKS

Contributed talks at conferences & workshops

01 Oct 2026 Dissipation-assisted quantum technologies, Palma de Mallorca, Spain

24 Sept 2026 12th bwHPC Symposium, Konstanz, Germany

15 Jun 2026 Midsummer Conference on Open Quantum Systems, Decoherence, and the Quantum-to-Classical Crossover, Helsinki, Finland

23 Apr 2026 Alexander von Humboldt Foundation Network Meeting, Tübingen, Germany

02 Mar 2026 DPG Spring Meeting of the Atomic, Molecular, Quantum Optics and Photonics Section (SAMOP), Mainz, Germany

22 Sept 2025 ECT* workshop: Attractors and Thermalisation in Nuclear Collisions and Cold Quantum Gases, Trento, Italy

03 May 2023 WE-Heraeus-Seminar: Exploring New Topics with Functional Renormalisation, Bad Honnef, Germany

OUTREACH

14 June 24 For articles, see v-noel.net/scicomm

27 Apr 23 Girls' Day: Prepared and delivered the workshop "The language of shapes: understanding Nature with mathematics" (Physics Department, Heidelberg University)

2016–2018 Outreach volunteering to give physics workshops at local primary schools (Oxford)

FURTHER INFORMATION

Languages English–Hungarian bilingual, German (intermediate), Japanese (intermediate)

Computing Numerically oriented coding in Julia, Python, Mathematica, MATLAB and C++

PUBLICATIONS

Peer-reviewed

V. Noel, I. Lesanovsky, *Quantum to classical relaxation dynamics of the dissipative Rydberg gas*, New J. Phys. 28 083507 (2026), arXiv:2604.10538

V. Noel, T. Gasenzer, K. Boguslavski, *Kelvin waves in nonequilibrium universal dynamics of relativistic scalar field theories*, Phys. Rev. Research 7, 033220 (2025), arXiv:2503.01771

A. N. Mikheev, V. Noel, I. Siovitz, H. Strobel, M. Oberthaler, J. Berges, *Extracting the symmetries of nonequilibrium quantum many-body systems*, SciPost Phys. 18, 044 (2025), arXiv:2407.17913

V. Noel, D. Spitz, *Detecting defect dynamics in relativistic field theories far from equilibrium using topological data analysis*, Phys. Rev. D 109, 056011 (2024), arXiv:2312.04959

Preprint

M. Jirasek, I. Lesanovsky, V. Noel, *Quantum Fisher information of driven-dissipative systems from Keldysh path integrals*, arXiv:2609.26462

V. Noel, C. Huang, A. N. Mikheev, J. Berges, *Nonthermal fixed point for massless scalar field theories*, arXiv:2609.26491

V. Noel, M. Fleischhauer, I. Lesanovsky, *Path integral approach to the truncated Wigner approximation of driven-dissipative spins*, arXiv:2607.26029

J. Hartmann, T. Schlegel, V. Noel, C.D. Mink, M Fleischhauer, *Truncated Wigner approximation for spins in continuous phase space*, arXiv:2607.17295

A. Molle, J.P. Drennhaus, V. Noel, N. Kolev, A. Bande, *Time-Resolved Rubidium-Assisted Electron Capture by Barium (II) Cation*, arXiv:2306.09580

In preparation

C. Verhoeven, V. Noel, C. Lubich, F. Carollo, I. Lesanovsky, *Long-range interacting dissipative spins with tree tensor networks in two dimensions*