europass Curriculum vitae

PERSONAL INFORMATION

Lorenzo Pettinari

Ph.D. student in Mathematical Physics

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Nationality: Italian **Date of birth:** 23 June 1999

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Research profiles

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EDUCATION AND TRAINING

2023 – present

Ph.D. in Mathematics (Mathematical Physics)

University of Trento, Trento, Italy.

Current Ph.D. student; expected completion: November/December 2026.

2021 – 2023

Master's degree in Physics

University of Pisa, Pisa, Italy. **Final grade:** 110/110 cum laude.

Thesis: *Non-Abelian Monopoles and Orientational Zero Modes*.

2018 – 2021

Bachelor's degree in Physics

University of Pisa, Pisa, Italy. **Final grade:** 110/110 cum laude.

Thesis: *Loss of ergodicity for topological systems on a lattice*.

APPOINTMENTS AND AWARDS

FY2027

Incoming Postdoctoral Researcher

RIKEN, Japan. Appointment to commence in FY2027; exact start date to be agreed.

1 November 2026 – 30 April 2027

Postgraduate research scholarship ("Borsa post-laurea")

Awarded a scholarship funded by the project *The Mathematics of Interacting Fermions*, under the supervision of Prof. Niels Benedikter.

AFFILIATIONS

Ph.D. student in Mathematics, University of Trento.

Member of the BELL research group, CSN IV, TIFPA (Trento local division of the Istituto Nazionale di Fisica Nucleare, INFN).

Member of the Istituto Nazionale di Alta Matematica (INdAM).

RESEARCH PERIODS ABROAD

30 May – 5 July 2026

Research Institute for Mathematical Sciences (RIMS), Japan

Research period under the supervision of Prof. Yoshiko Ogata.

7 January – 8 February 2025

University of Potsdam, Germany

Research period under the supervision of Prof. Matthias Keller.

ACADEMIC TEACHING

2025

Teaching Assistant — Analysis II

University of Trento, Department of Physics.

Multivariable calculus, differentiation and integration, curves and surfaces.

20 hours of classroom teaching and 34 hours of support activities.

2024

Teaching Assistant — Analysis II

University of Trento, Department of Physics.

Multivariable calculus, differentiation and integration, curves and surfaces.

26 hours of classroom teaching and 48 hours of support activities.

MASTER'S THESIS SUPERVISION

2024

Co-advisor of Carlo Rossi (University of Pavia)

Thesis: *Analisi Semiclassica dei Sistemi Bosonici Interagenti*.

Together with Prof. Marco Falconi (Politecnico di Milano) and Prof. Claudio Dappiaggi (University of Pavia).

REFEREEING ACTIVITY

Annales Henri Poincaré; *Mathematical Physics, Analysis and Geometry*.

LANGUAGE SKILLS

Mother tongue: Italian.

English: C1 level. IELTS Academic: 8.0/9.0, obtained on 14 October 2023.

Japanese: Self-assessed N5–N4 level; self-taught.

DIGITAL SKILLS

Fortran: Acquired during the bachelor's thesis and the master's course *Numerical Methods for Physics* (9 CFU).

C: Acquired during the bachelor's course *Informatics* (6 CFU).

Python: Acquired during the bachelor's courses *Laboratory I* and *Laboratory II* (12 + 12 CFU).

MATLAB: Acquired during the bachelor's course *Digital Technologies* (12 CFU).

Mathematica: Self-taught.

PUBLICATIONS

2026 **Corrigendum to: "Quantization and the resolvent algebra" [J. Funct. Anal. 277 (8) (2019) 2815–2838]**
Teun D. H. van Nuland and Lorenzo Pettinari.
Journal of Functional Analysis **290**, 111184 (2026).
DOI: 10.1016/j.jfa.2025.111184.

2025 **Classical and quantum KMS states on spin lattice systems**
Nicolò Drago, Lorenzo Pettinari and Christiaan J. F. van de Ven.
Communications in Mathematical Physics **406**, 163 (2025).
DOI: 10.1007/s00220-025-05325-2.

2025 **On Classical Aspects of Bose–Einstein Condensation**
Lorenzo Pettinari. *Annales Henri Poincaré* (2025).
DOI: 10.1007/s00023-025-01639-y.

PREPRINTS

2026 **Phonon dispersion relation in weakly coupled Bose gas beyond Bogoliubov approximation**
Jan Dereziński and Lorenzo Pettinari. arXiv:2610.27810.
DOI: 10.48550/arXiv.2610.27810.

2026 **Damping of phonons in Bose gas at low temperature**
Jan Dereziński and Lorenzo Pettinari. arXiv:2602.07701.
DOI: 10.48550/arXiv.2602.07701.

2026 **Coupling of the continuum and semiclassical limit. Part I: convergence of eigenvalues**
Matthias Keller, Lorenzo Pettinari and Christiaan J. F. van de Ven.
arXiv:2602.23156. DOI: 10.48550/arXiv.2602.23156.

2025 **Subcriticality at high temperatures in spin lattice systems**
Nicolò Drago, Lorenzo Pettinari and Christiaan J. F. van de Ven.
arXiv:2511.12651. DOI: 10.48550/arXiv.2511.12651.

CONFERENCE PROCEEDINGS

2026 **Algebraic approaches to Bose–Einstein condensation**
Lorenzo Pettinari. To appear in *International Journal of Theoretical Physics* (proceedings of IQSA2025).
IQSA2025 conference website.

REFERENCES

Prof. Jan Dereziński — University of Warsaw, Department of Physics, Poland.
Jan.Derezinski@fuw.edu.pl

Prof. Matthias Keller — University of Potsdam, Department of Mathematics, Germany.
matthias.keller@uni-potsdam.de

Prof. Valter Moretti — University of Trento, Department of Mathematics, Italy.
valter.moretti@unitn.it

Prof. Nicolò Drago — University of Genova, Department of Mathematics, Italy.
nicolo.drago@unige.it

INVITED TALKS

20–22 January 2027 (scheduled)
Trails in Quantum Mechanics and Surroundings
Accademia Pontaniana, Naples, Italy.

7 September 2026
Chilean–Polish Mathematical Meeting in Wrocław: Mathematical Physics Session
Wrocław, Poland.

3 September 2026
Analysis, Probability and Mathematical Physics
Cortona, Italy.

22 July 2026
Research collaboration
Technische Universität München, Munich, Germany.

24 April 2026
Research collaboration
University of Warsaw, Warsaw, Poland.

18 March 2026
Research collaboration
University of Milano, Milan, Italy.

12 January 2026
Renormalization from Quantum Field Theory to Statistical Mechanics and Complex Systems
Collegio Ghislieri, Pavia, Italy.

16 December 2025
Classical and Quantum Mathematical Physics Young Research Symposium
University of Genova, Genoa, Italy.

6 November 2025
Research collaboration
University of Warsaw, Warsaw, Poland.

7 March 2025
Research collaboration
University of Genova, Genoa, Italy.

9 December 2024
Winter Seminars
University of Genova, Genoa, Italy.

13 November 2024
Research collaboration
Politecnico di Milano, Milan, Italy.

POSTERS

26–30 August 2024
Rigorous Renormalization Group Analysis of Collective Phenomena in Fermionic Quantum Systems
Lake Como School of Advanced Study, Como, Italy.

SCIENCE DISSEMINATION

20 November 2024
Talk for the Associazione Italiana Studenti di Fisica (AISF)
In collaboration with Prof. Nicolò Drago, Trento, Italy.
Title: *Dalla Matematica alla Fisica. . . E viceversa: quantizzare un mondo classico*.

1 and 5 July 2024
Presentation of the BELL CSN IV research programme
Presentation to the local (TIFPA) and national (INFN) groups.

CONTRIBUTED TALKS

23 June 2026 **The Mathematical Roads to QFT: Summer Conference**
RIMS, Kyoto University, Kyoto, Japan.

8 May 2026 **LQP52: Local Quantum Physics 52 and Mathematical Physics in the Heart of Germany VII**
University of Paderborn, Paderborn, Germany.

9 February 2026 **Recent Advances in Many-Particle Systems**
University of Pisa, Pisa, Italy.

1 July 2025 **Intermediate IQSA 2025 Conference**
Tropea, Italy.

5 April 2025 **LQP50: Workshop on Foundations and Constructive Aspects of Quantum Field Theory**
Georg-August-Universität Göttingen, Göttingen, Germany.

11 February 2025 **Mathematical Challenges in Quantum Mechanics: School and Workshop**
GSSI, L'Aquila, Italy.

8 June 2024 **48th LQP Workshop and Detlev-Fest**
University of Leipzig, Leipzig, Germany.

4 June 2024 **A Modern Odyssey: Quantum Gravity meets Quantum Collapse at Atomic and Nuclear Physics Energy Scales in the Cosmic Silence**
ECT*, Trento, Italy.

CONFERENCES AND SCHOOLS ATTENDED

26–29 October 2026 **Large Scale Dynamics: Quantum, Classical & Stochastic**
TUM, Institute for Advanced Study, Garching campus, Munich, Germany.

7–11 September 2026 **Chilean–Polish Mathematical Meeting in Wrocław: Mathematical Physics Session**
Wrocław, Poland.

31 August – 4 September 2026 **Analysis, Probability and Mathematical Physics**
Cortona, Italy.

29 June – 3 July 2026 **The Mathematical Roads to QFT: Japan–Italy Quantum Meeting**
RIMS, Kyoto University, Kyoto, Japan.

22–26 June 2026 **The Mathematical Roads to QFT: Summer Conference**
RIMS, Kyoto University, Kyoto, Japan.

7–9 May 2026 **LQP52: Local Quantum Physics 52 and Mathematical Physics in the Heart of Germany VII**
University of Paderborn, Paderborn, Germany.

13 March 2026 **Araki–Woods Day**
Politecnico di Milano, Milan, Italy.

9–11 February 2026 **Recent Advances in Many-Particle Systems**
University of Pisa, Pisa, Italy.

2 February 2026 **FoQuS26: New Trends on the Foundations of Quantum Systems**
Politecnico di Milano, Milan, Italy.

CONFERENCES AND SCHOOLS ATTENDED (CONTINUED)

11–12 January 2026 **Renormalization from Quantum Field Theory to Statistical Mechanics and Complex Systems**
Collegio Ghislieri, Pavia, Italy.

16 December 2025 **Classical and Quantum Mathematical Physics Young Research Symposium**
University of Genova, Genoa, Italy.

24–28 November 2025 **Quantum Many-body Systems and Bose–Einstein Condensation: A Mathematical Physics Perspective**
ESI, Vienna, Austria.

15–17 September 2025 **QFT at the Crossroads between Mathematics and Physics**
Sapienza Università di Roma, Rome, Italy.

8–12 September 2025 **Cergy 2025: Quantissima sur Oise**
Cergy, France.

30 June – 4 July 2025 **Intermediate IQSA 2025 Conference**
Tropea, Italy.

4–5 April 2025 **LQP50: Workshop on Foundations and Constructive Aspects of Quantum Field Theory**
Georg-August-Universität Göttingen, Göttingen, Germany.

10 March 2025 **Kick-Off Meeting**
Politecnico di Milano, Milan, Italy.

9–14 February 2025 **Mathematical Challenges in Quantum Mechanics: School and Workshop**
GSSI, L'Aquila, Italy.

7–11 November 2024 **LQP49: Workshop on Foundations and Constructive Aspects of Quantum Field Theory**
Friedrich-Alexander-Universität, Erlangen, Germany.

4–6 November 2024 **Universal Themes in Bose–Einstein Condensation**
ECT*, Trento, Italy.

26–30 August 2024 **Rigorous Renormalization Group Analysis of Collective Phenomena in Fermionic Quantum Systems**
Lake Como School of Advanced Study, Como, Italy.

5–8 June 2024 **48th LQP Workshop and Detlev-Fest**
University of Leipzig, Leipzig, Germany.

3–4 June 2024 **A Modern Odyssey: Quantum Gravity meets Quantum Collapse at Atomic and Nuclear Physics Energy Scales in the Cosmic Silence**
ECT*, Trento, Italy.

8–12 March 2024 **Curved Spacetimes, Field Theory and Beyond**
Institut Henri Poincaré, Paris, France.

11–12 January 2024 **Common Trends and Challenges in QFT and Stochastic PDEs**
Collegio Volta, Pavia, Italy.