

Mohamed HATIFI

Adjunct Lecturer at École Centrale
Méditerranée and Research Scientist
position at Institut Fresnel, France

Work address:
Institut Fresnel
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Citizenship: French



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Research profile

Theoretical physicist working on **open quantum systems for quantum technologies**, with emphasis on **quantum photonics**, **hybrid quantum platforms**, **quantum information** and **quantum sensing**. Currently a researcher in the [ARTEMIS](#) project at Institut Fresnel (integrated quantum light sources, single-photon emission, quantum information), building on prior postdoctoral work at OIST. I also have more than three years of university-level teaching experience, with over 300 hours taught in physics, quantum technologies, and computational methods at university and engineering-school levels.

Main research axes:

- **Quantum photonics and open-system benchmarking:** light-matter interactions, single-photon signatures under realistic fluctuations, and non-Markovian memory as a resource for quantum information and sensing.
- **Hybrid quantum platforms:** spin-mechanical and optomagnonic systems, engineered dissipation, nonclassical-state generation, and autonomous maser-like dynamics.
- **Foundations and relativistic links (secondary axis):** pilot-wave dynamics, quantum non-equilibrium, covariant spin-1/2 formulations, solitons, semi-classical gravity, and links to relativistic quantum information.

Selected evidence:

- **16 published papers**, including **PRL, PRA, PRR, PRB, APL Quantum**, with multiple first-author and single-author contributions.
- **Funding & IP:** [OIST Proof-of-Concept Grant](#) (JPY 8,000,000) and patent application (WO2025115988A1) on [magnonic device concepts](#).
- **Recognition and networks:** CNU qualification in three sections (28/29/30), **shortlisted twice for associate-professor** interviews in France, and active participation in European quantum networks and collaborations.

Current and Previous Positions

Dec. 2024	– Research Scientist at Institut Fresnel and Adjunct Lecturer at École Centrale Méditerranée, Marseille, France.
Present	
Group:	Prof. Thomas Durt , CLARTE group.
Project:	ARTEMIS (photonics and quantum technologies: single-photon sources, quantum cryptography, and quantum information).
Teaching:	128 hours of lectures, tutorials, and laboratory sessions in quantum physics and optics.
Nov. 2022	– Postdoctoral Researcher, Okinawa Institute of Science and Technology (OIST), Japan.
Nov. 2024	
Group:	Prof. Jason Twamley , Quantum Machine Unit (theory group).
Research topics:	Optomagnonics; light-matter interactions; quantum thermodynamics.

Jan. 2021 – Postdoctoral Researcher, Okinawa Institute of Science and Technology
Oct. 2022 (OIST), Japan.
 Group: [Prof. Denis Konstantinov](#), Quantum Dynamics Unit (experimental group).
 Research topics: Numerical modelling and theoretical interpretation of experiments on electrons levitating above the surface of superfluid helium.

Oct. 2019 – Temporary Lecturer and Research Assistant (A.T.E.R.), Department
Sep. 2020 of Physics, Aix-Marseille University / Institut Fresnel.
 Teaching: More than **206 hours** (lectures, tutorials, and laboratory sessions).
 Contact: [Prof. Jean-Marc Themlin](#) or [Prof. Thomas Durt](#)

Education

Sep. 2016 – Ph.D. in Theoretical Physics (École Centrale Marseille co-accredited
Sep. 2019 with Aix-Marseille University), Institut Fresnel, Marseille, France.
 Thesis title: “Beyond pilot wave dynamics: non-linearity and non-equilibrium in quantum mechanics”.
 Advisor: [Prof. Thomas Durt](#).
 Keywords: Quantum foundations; semiclassical gravity; hydrodynamic formulation; quantum non-equilibrium; decoherence in Doppler cooling; nonlinearity and nonlocality; pilot-wave dynamics.

Sep. 2015 – M.Sc. (Master 2), École Normale Supérieure (ENS-ICFP), Paris,
July 2016 France.
 Specialization: Theoretical quantum physics.
 Honours: Assez bien (French grading: obtained with class honours).
 Additional diploma: Magistère de physique, Université Paris Cité / Paris Diderot (Paris VII), France; selective advanced university diploma in physics, awarded for the 2015/2016 academic year with Mention Bien.
 Research project: Laboratoire de Physique Statistique (LPS-ENS), [Prof. Marc-Etienne Brachet](#) (Jan.–Jun. 2016): *Hydrodynamics of quantum automata: Madelung description of singularities (quantum walks, hydrodynamics, statistical physics)*.

Sep. 2014 – Master 1 / Magistère, Université Paris Diderot (Paris VII), France.
July 2015
 Honours: Très bien (French grading for: obtained with first class honors).
 Rank: 2nd.
 Research project: Institut des NanoSciences de Paris (INSP), Sorbonne Université (Jussieu / Paris VI), France (May–Jul. 2015), [Prof. Anna Levy](#) : *Time-resolved study of the gold solid–liquid phase transition on the femtosecond timescale*.

Sep. 2011 – B.Sc. in Physics, Université de Nice Sophia Antipolis, France.
July 2014
 Honours: Très bien (French grading for: obtained with first class honors).
 Rank: 1st.
 Research project: Observatoire de la Côte d’Azur (OCA), Nice, France (Mar.–Jul. 2014), [Prof. Marianne Faurobert](#): *Magnetic fields on the quiet Sun*.

Publications

Publications marked with ★ indicate **shared first authorship** (equal contribution).

Published papers

- [1] **M. Hatifi** (2026). [Autonomous phonon maser in levitated spin mechanics](#). *Phys. Rev. A Letter*, **113**(4), L041501.
- [2] **M. Hatifi** (2026). [Geometry-controlled freezing and revival of Bell nonlocality through environmental memory](#). *Phys. Rev. A*, **113**(2), 022204.
- [3] **M. Hatifi**, A. Nayak, & J. Twamley (2025). [Spin-mechanical thermal machines](#). *Phys. Rev. Res.*, **7**(4), 043338.
- ★ [4] A. Kani, **M. Hatifi**, & J. Twamley (2025). [Magnomechanical rotational Schrödinger's cat](#). *APL Quantum*, **2**(4), 046104.
- ★ [5] A. Kani, **M. Hatifi**, & J. Twamley (2025). [Squeezed microwave and magnonic frequency combs](#). *APL Quantum*, **2**(1), 016112.
- [6] **M. Hatifi** (2024). [Relativistic Bohmian mechanics revisited: A covariant reformulation for spin-1/2 particles](#). *Physics Letters A*, **518**, 129680.
- [7] A. Lévy, M. de Anda Villa, **M. Hatifi**, E. Lamour, *et al.* (2024). [Mitigating space charge in time-resolved photoelectron spectroscopy to study laser-heated copper dynamics in the high fluence regime](#). *Phys. Rev. B*, **109**(17), 174311.
- [8] I. Kostylev, **M. Hatifi**, D. Konstantinov, & A. D. Chepelianskii (2024). [Delocalized low-frequency magnetoplasmon in a two-dimensional electron fluid with cylindrical symmetry](#). *Phys. Rev. B*, **109**(16), 165150.
- [9] **M. Hatifi**, R. Willox, & T. Durt (2023). [Convergence to quantum equilibrium: deterministic vs. stochastic pilot wave dynamics](#). In *Advances in Pilot Wave Theory: From Experiments to Foundations*, pp. 91–117, Springer (Boston Studies in Philosophy of Science).
- [10] **M. Hatifi**, D. Mara, B. Bokic, *et al.* (2022). [Fluorimetry in the strong-coupling regime: From a fundamental perspective to the engineering of a new tool for tracing and marking materials and objects](#). *Applied Sciences*, **12**(18), 9238.
- [11] I. Kostylev, A. A. Zadorozhko, **M. Hatifi**, & D. Konstantinov (2021). [Thermoelectric transport in a correlated electron system on the surface of liquid helium](#). *Phys. Rev. Lett.*, **127**, 186801.
- [12] T. Durt & **M. Hatifi** (2021). [Collective effects in droplets dynamics: the rosette model](#). *Annales de la Fondation Louis de Broglie*, **46**(1), 127.
- [13] M. de Anda Villa, A. Lévy, J. Gaudin, R. Bouillaud, D. Descamps, B. Dorado, N. Fedorov, R. Grisenti, **M. Hatifi**, H. Jouin, E. Lamour, S. Macé, P. Martin, S. Petit, C. Prigent, R. Sobierajski, S. Steydli, M. Trassinelli, A. Wawro, and D. Vernhet (2020). [Ultrafast laser induced structural dynamics probed by time-resolved photoelectron spectroscopy](#). *Journal of Physics: Conference Series*, **1412**, 132025.
- [14] **M. Hatifi**, G. Di Molfetta, F. Debbasch, & M. Brachet (2019). [Quantum walk hydrodynamics](#). *Scientific Reports*, **9**(1), 2989.
- [15] **M. Hatifi**, R. Willox, S. Colin, & T. Durt (2018). [Bouncing oil droplets, de Broglie's quantum thermostat, and convergence to equilibrium](#). *Entropy*, **20**(10), 780.
- [16] **M. Hatifi**, C. Lopez-Fortin, & T. Durt (2018). [de Broglie's double solution: limitations of the self-gravity approach](#). *Annales de la Fondation Louis de Broglie*, **43**(1), 63–90.

Book chapter

- [L1] **M. Hatifi**, R. Willox, & T. Durt (2023). [Convergence to quantum equilibrium: deterministic vs. stochastic pilot wave dynamics](#). In *Advances in Pilot Wave Theory: From Experiments to Foundations* (Springer, Boston Studies in Philosophy of Science), pp. 91–117.

Submitted manuscripts

- [S1] **M. Hatifi** & B. Stout (2026). [Basis- and Channel-Selective Quantum Photodetection](#). *arXiv:2605.16886*. Submitted to *Advanced Quantum Technologies*.
- [S2] **M. Hatifi** (2026). [Velocity-Controlled Directional Readout of Single Photons](#). *arXiv:2605.21206*. Submitted to *Physical Review Letters*.

- [S3] M. Hatifi (2026). [Self-Generated Chiral Rotation in Whispering-Gallery Optomechanics](#). *arXiv:2605.24185*. Submitted to *Physical Review Letters*.
- [S4] M. Hatifi (2025). [Quantum Gravity Without Metric Quantization: From Hidden Variables to Hidden Spacetime Curvatures](#). *arXiv:2502.08421*. Submitted to *Nature Communications*.
- [S5] M. Hatifi & T. Durt (2025). [Revealing self-gravity in a Stern–Gerlach Humpty–Dumpty experiment](#). *arXiv:2006.07420*. Submitted to *Quantum*.

Manuscripts in preparation

- [P1] M. Hatifi, P. Wieteska-Bajak, T. Durt, & J. Wenger (2026). Linking Photon Antibunching to Fluorescence Correlation Spectroscopy in Diffusing Emitters. *In preparation*.
- [P2] M. Hatifi, T. Durt, & B. Stout (2026). Revisiting Hong–Ou–Mandel interference: classical optics to quantum information. *In preparation*.

--- Talks, courses & workshops

Oral presentations (seminars and invited talks)

- **23 June 2026:** “*Fluorimetry meets Quantum Regime: From Metrology to new Anticounterfeiting tools*”, Invited talk, [Stakeholder Event](#), Ministero delle Imprese e del Made in Italy, Rome, Italy.
- **21 Apr. 2026:** “*Where Does the Quantum Particle Go?*”, Internal seminar, Institut Fresnel, Marseille, France.
- **9 Apr. 2026:** “*Where Does the Quantum Particle Go?*”, Invited seminar, [Institute of Physics Belgrade](#) (IBP), Belgrade, Serbia.
- **16 Dec. 2025:** “*How to Hide a Needle in a Haystack Thanks to Quantum Physics?*”, Internal seminar, Institut Fresnel, Marseille, France.
- **9 Dec. 2025:** “*How to Hide a Needle in a Haystack Thanks to Quantum Physics?*”, [Quantum AMU Days](#), Marseille, France (invited talk; substituting for T. Durt).
- **18 Nov. 2025:** “*Light–Matter Interactions in the AQIPCS Portfolio: an ARTEMIS Perspective*”, invited presentation (European projects portfolio), Brussels, Belgium.
- **28 Oct. 2025:** “*ARTEMIS Project: Fluorescence Toward the Quantum Regime*”, Vigo, Spain.
- **10 Feb. 2023:** Seminar, Institut Fresnel, Marseille, France. “*Testing Gravity at the Quantum Scale with Stern–Gerlach Interferometry in the Mesoscopic Regime.*”
- **17 Jun. 2022:** OIST internal seminar, Okinawa, Japan. “*Bohmian Rhapsody: Quantum Mechanics with Trajectories.*”
- **31 Jul. 2021:** [QCWV2021](#) (Quantum Computing Workshop, Qiskit/IBM), online (Vietnam). “*Electrons on Liquid Helium: a Platform for Quantum Computing.*”
- **4 Nov. 2019:** Workshop *Theory of the Double Solution and Quantum Trajectories*, Louis de Broglie Days 2019, Institut Henri Poincaré, Paris, France. “*Bouncing Oil Droplets and Quantum Trajectories.*”
- **18 Dec. 2018:** Internal seminar, Institut Fresnel, Marseille, France. “*De Broglie’s Double Solution Program and the Quantum Thermostat.*”
- **19 Oct. 2016:** Internal seminar, Institut Fresnel, Marseille, France. “*Hydrodynamics of Quantum Automata.*”
- **11 Oct. 2016:** CANA seminar, Laboratoire d’Informatique Fondamentale (LIF), Luminy, Marseille, France. “*Quantum Walks: Simulation of a Relativistic Fluid.*”

Courses / lectures

- **9–12 Jun. 2025:** [QREV25 thematic school](#), Peyresq, France. Course: “*Collective Spin-Wave Excitations in Quantum Technologies: From Magnons to Spin-Based Sensors and Computing.*”

Selected workshops

- **11–13 Jul. 2017:** 2nd FQXI (Foundational Questions Institute) workshop in quantum foundations, Marseille, France.

Posters

- **15–17 Nov. 2023:** Quantum Innovation 2023, Tokyo Square Garden (Convention Hall), Japan.
“Spin-dependent harmonic traps for electrons on liquid helium.”
- **18–24 Aug. 2022:** 29th International Conference on Low Temperature Physics (LT29), Sapporo, Japan.
“Spin-dependent harmonic traps for electrons on liquid helium.”
- **15–16 Nov. 2018:** Open Questions on Energy Transport and Conversion in Nanoscale Quantum Systems, Marseille, France.
- **8 Jun. 2018:** Doctoral School Days, Marseille, France.
“De Broglie’s double solution program and the quantum thermostat.”
- **29 Nov.–1 Dec. 2017:** Eighth Colloquium of the GDR IQFA (CNRS), Université de Nice Sophia Antipolis, France.
“Bouncing oil droplets: a macroscopic realization of de Broglie–Bohm dynamics.”
- **26–28 Oct. 2017:** Emergent Quantum Mechanics (David Bohm Centennial Symposium), London, UK.
- **1 Jun. 2017:** Doctoral School Days, Marseille, France.
“Bouncing oil droplets: a macroscopic realization of de Broglie–Bohm dynamics.”

Invited research visit

- **8–12 Apr. 2026:** Visiting researcher, Institute of Physics Belgrade (IBP), Belgrade, Serbia. Activities: invited seminar *“Where Does the Quantum Particle Go?”* and scientific collaboration with [Prof. Branko Kolaric](#).

Media coverage & outreach

Media coverage

- *Quantum Gravity Without Metric Quantization: From Hidden Variables to Hidden Spacetime Curvatures* (arXiv:2502.08421), covered by [The Science Archive](#).
- *Geometry-Controlled Freezing and Revival of Bell Nonlocality through Environmental Memory*, highlighted by [Quantum Zeitgeist](#).
- *Velocity-Controlled Directional Readout of Single Photons*, highlighted by [Quantum Zeitgeist](#).

Outreach & innovation

- OIST Innovation interview on patent filing and inventor experience (official channel): [For the link of the interview, click here](#).

Awards, grants & intellectual property

Intellectual property

- **Patent application (WO2025115988A1):** *Magnonic device and method*. Filed in collaboration with *Jason Twamley, Steven Stophel-Sagona, and A. Kani* at *OIST*, within the *OIST Proof-of-Concept Program*.

Grants

- **2024: OIST Proof-of-Concept (PoC) Program Grant** (JPY 8,000,000; ~EUR 51k, at the time of award).
Project: [Microwave masers and frequency combs for communications and sensing](#).
- **2022: OIST Mini-Grant** (JPY 400,000; ~EUR 3k, at the time of award).
Exploration of quantum-computing applications using a 2D electron gas levitating above superfluid helium.

Honours & distinctions

- **CNU qualification (France) for Maître de Conférences / Associate Professor:** Sections 28 (condensed matter), 29 (elementary constituents), 30 (dilute media and optics).
- **Shortlisted for associate-professor interview panels (France):** Centrale Marseille (MCF #4036, 2023) and Université de Bourgogne (MCF #250451, 2025).

Awards

- **2019:** “Ma thèse en 180 secondes” prize, Institut Fresnel, Marseille, France.
- **2019:** Best poster award, Doctoral School Days, Marseille, France.
- **2018:** Best poster award, Doctoral School Days, Marseille, France.

Active collaborations & international networks

Networks and consortia

- Member of the *AQIPCS Portfolio* (*Alternative Quantum Information Processing, Communication, and Sensing*), an EIC-supported network fostering synergies across European quantum projects.
- Member of the COST Action *CA23115 – Relativistic Quantum Information (RQI)*. Active participation in Working Groups: WG1 (foundations and relativistic extensions), WG2 (QFT in curved spacetime and quantum-gravitational effects), WG3 (experimental and observational aspects).
- Active member of the *Fondation Louis de Broglie*.

Active research collaborations

- Active collaboration with **Prof. Brian Stout** on classical and quantum optics, nanophotonics, and foundational aspects of interference.
- Active collaboration with **Prof. Branko Kolaric** (UMONS) on photonics and nanoplasmonics.
- Active collaboration with **Prof. Jason Twamley** (Quantum Machine Unit, OIST) on hybrid quantum systems (magnonics, optomechanics, quantum frequency combs).
- Active collaboration with **Prof. Ralph Willox** (University of Tokyo) on mathematical models in quantum foundations.
- Collaboration with **Prof. Denis Konstantinov** (Quantum Dynamics Unit, OIST) on 2D electron gases on helium and quantum-computing applications.

Academic service & organization

Scientific events and training

- **2025–2026:** Co-organizer of the CLARTE group seminar series, Institut Fresnel, Marseille, France.
- **2025:** Co-organizer of the *QREV25 thematic school* (with **T. Durt** and **V. D’Auria**), Peyresq, France.
QuantEdu-France / French Quantum Plan; thematic school on quantum technologies and the “second quantum revolution”.
- **2018–2019:** Organizer of the group seminar series, Institut Fresnel, Marseille, France.

Laboratory governance and collective responsibilities

- **Postdoctoral representative, Laboratory Council (Institut Fresnel).** Elected representative of postdoctoral researchers; contribution to discussions on laboratory organization and scientific life.
- **Psychosocial risks (RPS) working group — postdoctoral liaison (Institut Fresnel).** Participation in prevention initiatives and actions aimed at improving workplace climate across staff categories.

Peer-review activity (referee)

- **Chaos, Solitons & Fractals** (Elsevier)
- **International Journal of Theoretical Physics** (Springer Nature)
- **Journal of Computational Electronics** (Springer Nature)
- **Mathematics** (MDPI)
- **Applied Physics** (MDPI)

Editorial service

- **Topic Editor**, *Nonequilibrium and Nonlinear Processes in Collective Dynamical Phenomena, Volume II*, *Frontiers in Physics / Complex Physical Systems* (2025–2026).

Scientific outreach & dissemination

- **2025:** Invited panelist, *Research Day* (École Centrale Méditerranée, Marseille, France) — post-doctoral representative; experience-sharing session and Q&A with first-year engineering students and with [Prof. Miguel Alonso](#).
- **2025:** Institut Fresnel (Marseille) — hosted a high-school group (initiative by Prof. Laetitia Abel-Tiberini): introduction to theoretical/quantum-physics research; Q&A; guidance on post-secondary pathways.
- **2024:** OIST (Japan) — meeting with Keio University students: introduction to quantum physics/quantum optics; research discussion; Q&A on international academic paths.
- **2018:** Open Day, École Centrale Méditerranée (Marseille, France) — presentations and discussions on academic pathways, research careers, and opportunities.

Numerical Skills

Programming	Python (QuTiP), MATLAB, Fortran 90, C/C++, Mathematica.
Web	Quarto, HTML, CSS; academic website development.

Teaching experience

École Centrale Méditerranée, Marseille, France

Adjunct Lecturer (vacataire)

- **Sep. 2025 – Present** *Teaching load: 64 hours + 2h oral assessment*
 - **Teaching scope:** quantum information, Newtonian mechanics, computational physics with MATLAB, introductory field theory, and quantum mechanics, across programmes ranging from first-year engineering students to MSc-level tracks.
 - *Selected modules designed and/or delivered:*
 - **Quantum Information:** qubits, superposition, entanglement, and introductory quantum-information protocols for communication and computation.
 - **Introduction to Field Theory:** symmetries, Noether's theorem, Lagrangian formulation from point particles to fields, relativistic wave equations (Klein–Gordon and Dirac), gauge symmetry, and a first introduction to Yang–Mills theory.
 - **Quantum Mechanics** (replacement lectures): core concepts of quantum theory within an upper-level physics module.
 - **Computational Quantum Physics / Matlab Labs:** numerical approaches to quantum mechanics, linking analytical concepts with simulation and visualisation.
 - **Newtonian Mechanics: Two-Body Problem:** centre-of-mass reduction, reduced mass, orbital dynamics, scattering in central potentials, conservation laws, and numerical exploration. **Matlab lab:** implementation and visualisation of two-body motion.
 - **Bibliographic Mini-Projects and Oral Presentations:** supervision of short student projects on topics such as Fermat's principle and quantum uncertainty relations, with emphasis

on scientific synthesis and oral communication.

- **Dec. 2024 – Jun. 2025**

Teaching load: 64 hours

- **Teaching scope:** quantum information, quantum tomography, quantum optics, quantum engineering, and scientific computing.
- *Selected modules designed and/or delivered:*
 - **Coding and Information Retrieval** (SISN track, M1-equivalent): information theory, search algorithms, introduction to quantum information (qubits, superposition, entanglement), overview of quantum computing, and quantum cryptography (including BB84), complemented by an invited lecture on experimental implementations.
 - **Quantum Engineering & Emerging Technologies** (PICSEL option, MSc level): GPS timing and relativity, quantum tomography (Weyl–Heisenberg framework and Wigner functions), entanglement-based protocols (teleportation, dense coding, entanglement swapping, and qudits), together with MATLAB-based modelling and classroom demonstrations such as the quantum eraser.
 - **Quantum Optics** ([Erasmus Mundus Europhotonics](#), MSc Year 1, tutorials): quantisation of the harmonic oscillator, coherent states, squeezing, and non-classical states of light.
 - **Matlab Labs for First-Year Engineering Students:** introductory computational sessions linking physical modelling, numerical tools, and scientific visualisation.
 - **Bibliographic Projects and Scientific Presentations:** supervision of student work aimed at developing autonomy, scientific synthesis, and oral presentation skills.

Aix–Marseille University, France

A.T.E.R. (full-time teaching and research assistant)

- **Oct. 2019 – Aug. 2020** *Teaching load: 206 contact hours (6h lectures, 124h tutorials, 76h labs)*

- **Signal Processing** (MSc Applied Physics & Instrumentation): MATLAB-based tutorials and laboratory sessions.
- **Scientific Programming in C++** (L3 professional track): computer laboratory sessions.
- **Physical Measurements / Instrumentation** (L3): tutorials and laboratory sessions.
- **Mathematics for Physics** (L2): tutorials and Python-based labs; also laboratory teaching in mathematics for physics and chemistry.
- **Molecular Symmetries and Group Theory** (L2): lectures and tutorials.
- **Electromagnetism** (Polytech Marseille, engineering Year 2): tutorials and laboratory sessions.
- **Thermodynamics II** (L2): tutorials.
- **Professional Development Project (PPPE)** (L3): tutorials including group-project supervision and e-portfolio mentoring.

Teaching contact

[Prof. Thomas Durt](#)

thomas.durt@centrale-med.fr

Supervision & mentoring

- | | |
|---------------------|---|
| Student supervision | <ul style="list-style-type: none">○ Juan Rafael Alvarez Velasquez — M2 internship: quantum foundations.○ Riya Seth — M2 internship: quantum foundations.○ Sougato Chowdhury — M2 internship: cooling of rotational degrees of freedom of a YIG ferromagnet.○ Sana Khalil — BSc internship: diamagnetic levitation.○ Savelii Dudoladov — M2 internship: diamagnetic levitation.○ Anshuman Nayak — Ph.D. mentoring: quantum thermodynamics with trapped spin particles.○ Tanya Iakovleva — Ph.D. mentoring: probing the nature of gravity using quantum sensors. |
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Ph.D. mentoring

/ co-supervision

- **Paula Wieteska-Bajak** — Ph.D. mentoring, ARTEMIS project (quantum metrology and sensing), 2024–2027.
- **Marthe Azzi** — Ph.D. co-supervision, 2025–2028: least-action principle; waves and rays; photon trajectories in curved spacetime.