

ALTHEA CAPPELLI



Düsseldorf



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EDUCATION

- 2022 – 2024 **Master of Science in Physics** **Leibniz University Hannover**
- Coursework in theoretical physics including various computer physics lectures (Python), quantum field theory, quantum optics, quantum information, particle physics, and minor in mathematics.
 - Thesis: "Cavity Response to Time Dependent Dark Matter Signals". (Grade: 1.1)
 - Supervisors: Jun.-Prof. Dr. Elina Fuchs and Prof. Dr. Klemens Hammerer
 - Used analytical computations and numerical methods (Mathematica, Python) from quantum optics to analyze the response of a high-frequency gravitational wave passing through a microwave cavity.
 - Presentation of a talk at the physics conference of the German Physical Society (DPG) in Karlsruhe.
- 2021 - 2022 **Semester Abroad** **Helsingin Yliopisto - University of Helsinki, Finland**
- Coursework focusing on particle physics and astrophysics.
 - Learned Finnish to A2 level.
- 2017 – 2022 **Bachelor of Science in Physics** **Leibniz University Hannover**
- Coursework including relativistic quantum mechanics and general relativity, and minor in mathematics.
 - Thesis: "Quantum mechanical description of the recovery of information from a black hole". (Grade: 1.0)
 - Supervisor: Prof. Dr. Tobias J. Osborne
 - Used tensor network techniques to estimate the error probability in recovering classical and quantum information from a black hole in Hawking's radiation model.

TEACHING EXPERIENCE

- 2019 – 2024 **Teaching Assistant** **Institute for Theoretical Physics**
- Holding exercise classes in theoretical physics, correcting exercise sheets including final written exams, and office hours for lecture, exercise sheets and computer exercises (Python).
- Mathematical Methods of Physics (2×)
 - Theoretical Electrodynamics (2×)
 - Analytical Mechanics and Special Relativity
 - Introduction into Quantum Theory (2×)
 - Mathematical Methods for Teachers
 - Electrodynamics for Teachers
 - Quantum Theory and Statistical Mechanics for Teachers
- 2024–2025 **Physics Lab Assistant** **Institute for Quantum Optics**
- Supervising students during the experiments, helping with data analysis (Python), explaining physical theoretical backgrounds, correcting laboratory reports, office hours for the reports.



Skills

- Python
- Tensorflow
- SQL
- Mathematica
- Latex



Hobbys

- Taekwondo
- Kickboxing
- Boulderling
- Hiking



Languages

- **Italian** - native
- **German** - fluent
- **English** - fluent
- **Spanish** - proficient
- **Finnish** - beginner