MAX MELCHING

Personal Information

Birth Place	Germany
Email	maxm.melching@gmail.com
GitHub	MaxMelching
Website	https://maxmelching.github.io

Education

M.Sc. Physics — Leibniz University Hannover

2022 – present

Current, non-final grade: 1,0 · Equivalent GPA: 4.0
Minor: Mathematics

B.Sc. Physics — Leibniz University Hannover

2018 – 2022

Final grade: 1,0 (summa cum laude) · Equivalent GPA: 4.0
Minor: Computer Science

Work Experience

Student Assistant — Max Planck Institute for Gravitational Physics

10/2024 – 03/2025

Mainly web development and organizational tasks

Reference: Frank Ohme · frank.ohme@aei.mpg.de

Student Assistant — Institute for Quantum Optics, Hannover

04/2023 – 07/2024

Data analysis and software development the Cold Atom Lab experiment onboard the ISS. During the latter, I was tasked with the development of a Python package that can be used to read, process and evaluate experimental data. This package has then been applied by myself and colleagues to extract information from real measurement data.

References: Naceur Gaaloul · gaaloul@iqo.uni-hannover.de, Gabriel Müller · g.mueller@iqo.uni-hannover.de

Student Assistant — Leibniz University Hannover

10/2021 – 02/2022

Tutoring in "Mechanics and Heat", a lecture on experimental physics for students in the first semester. This included grading of exercise sheets and the exam, as well as teaching a tutorial.

Reference: Tammo Block · block@maphy.uni-hannover.de

Publications & Theses

Master Thesis — Max Planck Institute for Gravitational Physics

11/2023 – 05/2025

Title: Systematic Errors in Gravitational Waveform Models

Description: theoretical development and extension, as well as implementation, of tools in the Fisher matrix framework that is aimed at quantifying waveform systematics.

Supervisors: Frank Ohme · frank.ohme@aei.mpg.de, Krishnendu NV · krishnendu.nv@icts.res.in

Bachelor Thesis — Max Planck Institute for Gravitational Physics

03/2022 – 10/2022

Title: Systematic Differences in the Source Properties of the Third Gravitational-Wave Catalog
Description: examination of waveform systematics in some of the detected gravitational wave events, focussing on the respective posterior distributions.

Supervisor: Frank Ohme · frank.ohme@aei.mpg.de

Honours & Awards

2023/2024 — Deutschlandstipendium · Leibniz University Hannover (monthly stipend for two semesters)

2022/2023 — Deutschlandstipendium · Leibniz University Hannover (monthly stipend for two semesters)

2020 — Niedersachsenstipendium · Leibniz University Hannover (one-time payment stipend)

Other Information

Computer skills

Advanced: Python, Jupyter, LaTeX, git (includes GitLab, GitHub)

Intermediate: Linux, Mathematica, C, Microsoft Windows

Basic: slurm, condor, MATLAB, Microsoft Office

Presentations

2024 — Poster at the LVK Meeting in Barcelona

2024 — Oral Presentation at the DPG Spring Meeting of the German physical society, section Gravitation and Relativity

Personal

Languages: German (Mothertongue) · English (Advanced)

Interests: Photography · Fitness & Running · Outdoor Games

October 7, 2024