C V – M A X M E L C H I N G

Personal Information

Email	maxm.melching@gmail.com
Phone	+49 (0) 1525 876 6522
GitHub	MaxMelching
Website	https://maxmelching.github.io

Education

2022 – present	*M.Sc. Physics*	Leibniz University Hannover
	Current, non-final grade: 1,0 · Equivalent GPA: 4.0	
	Minor: Mathematics	
2018 – 2022	*B.Sc. Physics*	Leibniz University Hannover
	Final grade: 1,0 (summa cum laude) · Equivalent GPA: 4.0	
	Minor: Computer Science	

Work Experience

10/2024 – present	*Student Assistant*	Max Planck Institute for Gravitational Physics

Mainly web development and organizational tasks.

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

04/2023 – 07/2024	*Student Assistant*	Institute for Quantum Optics, Hannover

Data analysis and software development for the Cold Atom Lab experiment onboard the ISS. Part of that was the development of a Python package that can be used to read, process and evaluate experimental data.

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

10/2021 – 02/2022	*Student Assistant*	Leibniz University Hannover

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

11/2023 – present	*Master Thesis*	Max Planck Institute for Gravitational Physics

Title: Systematic Errors in Gravitational Waveform Models

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

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

03/2022 – *10/2022*	*Bachelor Thesis* Max Planck Institute for Gravitational Physics

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

09/2024	Poster "Using Correlations For Good – Systematic Errors Using Alignment" at the LIGO-Virgo-KAGRA Meeting in Barcelona (LIGO DCC: G2401544)
03/2024	Oral Presentation "Systematic Differencves In The Source Properties Of Gravitational Wave Signals" at the DPG Spring Meeting of the German physical society, section Gravitation and Relativity

PERSONAL

LANGUAGES: German (Native) · English (Full Working Proficiency)

December 7, 2024