Joachim Pomper

BSc

Am Brühlwald 2a
8075 Hart bei Graz
Austria
📱 *+43 664 73320390*
✉ *joachim.pomper.phy@gmail.com*
🌐 *joachim-pomper.github.io/homepage/*
🐦 *JoachimPomper*
 Joachim-Pomper

Personal information

Date of birth	22.04.1997
Nationality	Austria

Education

2020-now	**Master studies in theoretical and computational physics** , University of Technology Graz (TUG) and University of Graz (KFU)
2016-2020	**Bachelor studies in technical physics** , University of Technology Graz (TUG) and University of Graz (KFU) Graduated with distinction (grade 1.0).
2007-2015	**School of general education**, BRG Petersgasse Graz
2003 -2007	**Elementary school**, Sacré Coeur Graz

Summer school programs

14.03.2022 - 25.03.2022	**Theoretical Aspects of Astroparticle Physics, Cosmology and Gravitation**, Galileo Galilei Institute

Teaching

01.10.2022- 31.01.2023	**Teaching assistant for advanced Quantum Mechanics**, *Institute of Theoretical Physics of KFU-Graz* , Physics master course Correcting homework and tutoring students in the subject of quantum mechanics.
01.10.2021- 31.01.2022	**Teaching assistant for statistical physics**, *Institute of Theoretical Physics of KFU-Graz* , Physics master course Tutoring and grading of first semester master students in statistical physics.
01.10.2021- 31.01.2022	**Teaching assistant for linear algebra**, *Institute of Applied Mathematics of TU-Graz*, Physics Bachelor course Tutoring and grading of first semester bachelor students in linear algebra.
01.3.2021- 30.06.2021	**Teaching assistant for differential forms in the context of electromagnetism**, *Institute of Applied Mathematics of TU-Graz*, Mathematics master course Researching, writing and preparing lecture notes for a mathematics master's program special topic lecture on differential forms in the context of electromagnetism.

01.3.2021- 30.06.2021	**Teaching assistant for vector-calculus**, *Institute of Applied Mathematics of TU-Graz*, Physics bachelor course Tutoring and grading of second semester bachelor students in vector-calculus.
01.10.2020- 28.02.2021	**Teaching assistant for calculus**, *Institute of Applied Mathematics of TU-Graz*, Physics Bachelor course Tutoring and grading of first semester bachelor students in basic calculus.
01.3.2019- 30.06.2019	**Teaching assistant for programming in physics**, *Institute of Computational Physics of TU-Graz*, Physics bachelor course Tutoring students in basic Matlab programming.
01.10.2018- 28.02.2019	**Teaching assistant for linear algebra**, *Institute of Applied Mathematics of TU-Graz*, Physics bachelor course Tutoring and grading of first semester bachelor students in linear algebra.
01.10.2017- 28.02.2018	**Teaching assistant for linear algebra**, *Institute of Applied Mathematics of TU-Graz*, Physics bachelor course Tutoring and grading of first semester bachelor students in linear algebra.

Work

Part-time jobs

01.10.2019- 30.09.2020	**Student trainee**, *BEST - Bioenergy and Sustainable Technologies, Area for automation and control*, https://best-research.eu Primarily focused on testing and developing software for hydraulic and thermal simulation of buildings and district heating grids

Internships

05.08.2018 - 30.09.2018	**Internship**, *BEST - Bioenergy and Sustainable Technologies, Subarea 4.2* Primarily focused on quality analysis of prediction models for a model predictive controller.

Languages

German	Mother tongue
English	fluent

Computer knowledge

Programming languages

Matlab	Advanced knowledge	*work experience*
Python	Basic knowledge	*university course*
Julia	Advanced knowledge	*work experience*
C++	Basic knowledge	*university course*
Mathematica	Basic knowledge	*self-taught*

Organization

Microsoft Office	Basic knowledge
Latex	Advanced knowledge, used for articles and presentations

Zotero	For structured literature management
Git	For software version control

Conference talks

I have had the pleasure to give a talk in the parallel sessions of two conference, one at international level, which took place in Sydney in Australia.

DSU2022	**Composite dark matter from non-abelian gauge theories with real representations** Presentation of results of my master's thesis
ÖPG2022	**Low energy effective description of dark Sp(4) theory with matter in non fundamental representation** Presentation of preliminary results of my master's thesis

Project selection from my time as a student

Bachelor thesis	**Analytische Berechnung der spontanen Magnetisierung von isotropen homogenen Ising Ferromagneten unter der Verwendung von Graßmann Zahlen** Supervisor: Univ.-Prof. Dipl.-Phys. Dr.rer.nat. Wolfgang von der Linden
Master thesis	**Low energy effective study of light pseudo-scalar mesons in $SO(N)$-like dark QCD** Supervisor: PD. Dr. Suchita Kulkarni
Uni course project	**A simple way to explain phenomena at the horizon of a static black hole** Supervisor: Univ.-Prof. Dr.rer.nat. Reinhard Alkofer
Uni course project	**Particle creation in an expanding universe** Supervisor: Univ.-Prof. Dr.rer.nat. Reinhard Alkofer
Uni course project	**Functional renormalization group approach for interacting Dirac fermions** Supervisor: Univ.-Prof. Dr.rer.nat. Reinhard Alkofer

For more information look at my personal website.

Further presentations during my time as a student

Besides the presentations above, I also gave a talk in the institutes master seminar.

Master seminar	**Introduction to dark matter phenomenology** General introduction to the topic of dark matter

Furthermore, I have gathered experience in reading, communicating and discussing research by presenting papers in my research groups journal club. Nine of the papers I presented are stated in terms of their arXiv numbers below.

[arXiv:hep-ph/2205.08088], [arXiv:gr-qc/1111.4824], [arXiv:gr-qc/0507028], [arXiv:hep-ph/2112.03755], [arXiv:astro-ph/1706.07433], [arXiv:hep-ph/1402.5143], [arXiv:hep-ph/1312.3325], [arXiv:hep-th/1803.07585], [arXiv:hep-th/9602093]