

# Tobias Marcel Wagner



Place and Date of Birth: Wiesbaden, June 9<sup>th</sup> 1997  
email: [tobias.wagner@uni-mainz.de](mailto:tobias.wagner@uni-mainz.de)

## Working Experience

---

- |                      |  |
|----------------------|--|
| Aug 2021 - present   | Researcher in the group INSPIRE of Prof. Dr. Sinova at the Institute of Physics at the Johannes Gutenberg - University, Mainz. Interdisciplinary research; high-performance cluster computing simulations and data analysis of experimental data in magnetic multi-layer systems in cooperation with Prof. Dr. Gomonay (Theory) and Prof. Dr. Jourdan (Experiment) |
| Apr 2020 - Aug 2021  | Research assistant in the group of Prof. Dr. Everschor-Sitte TWIST at the Institute of Physics at the Johannes Gutenberg - University, Mainz. Application of analytical and numerical calculations and machine learning to magnetic systems in cooperation with Prof. Dr. Gomonay  |
| Oct 2019 - Apr 2020  | Research assistant in the group of Prof. Dr. Denig at the Institute of Nuclear Physics at the Johannes Gutenberg-University, Mainz. High-performance cluster computing simulations for the BESIII experiment, Efficiency studies at BESIII   |
| Apr 2018 - Sept 2018 | Research assistant in the group of Prof. Dr. Berger at the Institute of Nuclear Physics Johannes Gutenberg - University, Mainz. Electronics development for the Mu3e experiment  |
| Oct 2016 - Mar 2018  | Operator of the Mainz Microtron Accelerator<br>Operation of the 1.5 GeV microtron cascade during night and weekend shifts  |

## Teaching Experience

---

- |           |   |
|-----------|---|
| Dec 2022  | Lecturer Micromagnetic and atomistic simulations  |
| Oct 2022  | Lecturer physics for medicine students  |
| Apr 2022  | Lecture assistant for experimental nuclear and particle physics   |
| Oct 2021  | Supervision of Bachelor Thesis "Atomistic Modelling of Domain Walls in Antiferromagnets and Ferromagnets"                                     |
| Oct 2021  | Lab teacher physics for medicine students   |
| Apr 2021  | Lecture assistant for Electrodynamics   |
| Oct 2020  | Lecture assistant and tutor for Classical Mechanics   |
| Sept 2020 | Supervision of Master Project "Simulation of Striped Magnetic Domains, Dzyaloshinskii-Moriya Interaction and Curie Temperature using VAMPIRE" |
| Jul 2019  | Tutor for Mathematical methods for physics  |
| Mar 2018  | Tutor for Signal Analysis   |

## Education

---

- |          |   |
|----------|---|
| Present  | Doctoral Student in Physics, Johannes Gutenberg - University, Mainz, Funded through Spin+X SFB/TRR 173<br>Research topic: "Analytical and Numerical Modeling of Antiferromagnetic-Ferromagnetic Heterosystems", Advisor: Prof. Dr. Sinova and Prof. Dr. Gomonay<br>Analytical analysis, micromagnetic and atomistic simulation of experimental data               |
| Aug 2021 | Master of Science in Physics, Johannes Gutenberg - University, Mainz<br>Thesis: "Interface Effects in Chiral Magnetic Structures and Antiferromagnetic-Ferromagnetic Heterosystems", Advisor: Prof. Dr. Everschor-Sitte and Prof. Dr. Gomonay<br>Analytical analysis and numerical simulation of magnetic heterosystems for spintronics<br>Thesis: 1.0 , Gpa: 1.3 |

Feb 2019	Bachelor of Science in Physics, Johannes Gutenberg - University, Mainz Thesis: "Clock Transmission for the Mu3e Experiment", Advisor: Prof. Dr. Berger Design, development and testing of a multichannel, any frequency, any output, optical to electric clock transmission PCB Thesis: 1.0 , Gpa: 1.7
Mar 2016	Abitur, Theresianum Gymnasium, Mainz Private high school of the roman catholic diocese Mainz Gpa: 1.3, Honors: Physics, Mathematics, English

## Research Interests

---

Solid State Physics, Interdisciplinary research in experimental and theoretical study of magnetism, Antiferromagnetic Spintronics, Antiferromagnetic-ferromagnetic Hybrid Systems, Atomistic and Micromagnetic Simulations, Machine Learning

## Selected Certificates

---

Mar 2022	HLRS Parallel Programming Workshop: Parallelization with MPI and OpenMP, in-person workshop Data Center (ZDV), Johannes Gutenberg - University, Mainz
Nov 2020	Python advanced, online-workshop Spin+X SFB/TRR 173, Johannes Gutenberg - University, Mainz
Sept 2020	Introduction to Intercultural Communication, online-workshop Spin+X SFB/TRR 173, Johannes Gutenberg - University, Mainz
Mar 2016	High school graduation prize in physics from the German Physical Society (DPG)
Jun 2013	Diplôme D'Études En Langue Française DELF A2, French Language certificate

## Languages

---

German: Mothertongue, English: Fluent, French: Basic

## Computer Skills

---

Languages	Python (7y), Java (4y), Wolfram Mathematica (7y), L <sup>A</sup> T <sub>E</sub> X(9y), C/C++ (1y), Git (6y), Bash (5y)
Electronics	CAD 3D PCB Design, Signal Analysis
Operating Systems	Linux (open Suse, Ubuntu, Scientific Linux, Fedora), Mac OS, MS Windows

## Social Activities

---

Sept 2021	Spin+X SFB/TRR 173 Supply Chain V Student Speaker (elected)
Sept 2021	Project JEITZT, Youth-church organization group, roman catholic diocese Mainz
Jun 2021	Youth-leading group, roman catholic parish St. Birgid, Wiesbaden-Bierstadt
Dec 2015	Youth-leading group, roman catholic parish St. Bernard, Mainz-Bretzenheim
Dec 2013	Internship at St. Josefs-Hospital Wiesbaden, Orthopedic ward

## Interests

---

Sports: Mountainbiking, Fitness Training, Jogging, Cycling, Hiking, Canoeing,  
Photography, Travelling, Family



Tobias Wagner  
Mainz, 5<sup>th</sup> February, 2023