

Mirco Troue



Education

Walter Schottky Institute

Dissertation - Excitons in two-dimensional materials

MUNICH

JAN 2022 – PRESENT

Technical University of Munich

Master studies - Condensed matter physics

APR 2019 – OCT 2021

| Thesis: On the Diffusion and Emission Characteristics of Interlayer Excitons in 2D Heterostructures

Bachelor studies - Physics

OCT 2015 – APR 2019

| Thesis: Investigation of the ^{42}K Background in GERDA Phase II Data

Experience

Technical University of Munich

Doctoral researcher (Walter Schottky Institute)

DEC 2021 – PRESENT

- ▶ Designing, aligning, and automating custom cryogenic optical spectroscopy setups, servicing of cryostats and pumps
- ▶ ISO 4 cleanroom work, including optical lithography and nano-analytical methods
- ▶ Presenting research results at international physics conferences via contributed talks and interactive poster sessions
- ▶ IT Administrator of the Walter Schottky Institute - Server deployment and maintenance, certificate infrastructure, and active directory management
- ▶ Admin in the Munich Science Network - PC and user management

Research assistant (Walter Schottky Institute)

MAY 2021 – OCT 2021

| Modeling of light emission from material stacks using the transfer-matrix method with Python

Student assistant (Chair of Scientific Computing)

OCT 2018 – MAR 2021

- ▶ Tutor for the lecture “Einführung in die wissenschaftliche Programmierung”
- ▶ Second-order optimization for Neural Network Training with Horovod
- ▶ Transfer-Learning on HPC linux clusters with Tensorflow
- ▶ Work for the SPPEXA (Software for Exascale Computing) priority program, including symposium organization and typesetting of the proceedings book

Deutsches Elektronen-Synchrotron

HAMBURG

Internship in the MFL group for the VUV-FEL FLASH

NOV 2011

| Accelerator operation & controls, beam dynamics & compression, programming of Start-to-End simulations (C and Fortran)

Voluntary work

ERES-Foundation

Scientific advisor for the exhibition “Seeing the Unseen”

DEC 2025 – PRESENT

Munich Center for Quantum Science and Technology

Science communicator

FEB 2022 – PRESENT

Public science talks (Deutsches Museum, Zamanand Festival), Trade fairs and public events (World of quantum, FORSCHA), Guided lab tours

Hard skills

Languages German (C2), English (C2, Corporate English Course), French (A1), Latin (Latinum)

Computational physics Python (NumPy, SciPy, Pandas, Matplotlib), C, Bash

Data analysis & Tools Git, SQL, ROOT (Cern), $\text{\LaTeX}$

HPC & Systems SLURM, Cluster Management, Linux, Windows Server, Ansible

Virtualization Docker, Hyper-V

IT & Networking Active Directory, Powershell, GPOs, OpenWrt, OPNsense

Soft skills

Completed soft skill courses

- ▶ Rhetorik 4.0 - Überzeugend auftreten und reden (Manuela Richter-Meyer)
- ▶ Agiles Projektmanagement - How to Scrum in der Forschung (Dr. Anke Soemer & Elisabeth Fischer)
- ▶ Lateral Leadership (Judith Bergner)
- ▶ Unlock the Power of (Creative) Data Visualisation (Hannah Kunde)

Problem-solving & Collaboration

- ▶ Systematic root-cause analysis of complex experimental setups and infrastructure failures
- ▶ Coordination of supervision and scientific research goals
- ▶ Bridging communication gaps between physics researchers, IT administration, and the public

Teaching, Presentation & Outreach

- ▶ Presenting complex physics topics at international academic conferences
- ▶ Giving large-scale university lectures and practical tutorials in experimental and computational physics
- ▶ Supervising and structuring academic research tracks for Bachelor's and Master's thesis candidates
- ▶ Delivering engaging public science presentations and guided lab tours for diverse audiences