



UNIVERSITY
OF COLOGNE

Faculty of Mathematics and Natural Sciences

PhD position (f/m/x) in Experimental Physics – ‘Control and dynamics of quantum materials’

Institute of Physics II | CRC 1238 | Group Professor Thomas Lorenz

We are one of the largest and oldest universities in Europe and one of the most important employers in our region. Our broad range of subjects, the dynamic development of our main research areas and our central location in Cologne make us attractive for students and researchers from around the world. We offer a wide range of career opportunities in science, technology, and administration.

The Collaborative Research Center 1238 consists of a team of scientists working in the area of theoretical and experimental physics. Our aim is to discover, understand, and control novel collective phenomena and functionalities in quantum materials arising from the interplay of spin-orbit coupling, correlations and topology, see <https://crc1238.uni-koeln.de/>.

YOUR TASKS

- » The PhD project focusses on in-depth experimental studies on bulk single-crystalline quantum materials with competing interactions that result in new types of groundstates with anomalous excitations.
- » The candidate will perform detailed low-temperature measurements of magnetic and thermodynamic properties to distinguish, e.g. long-range magnetically ordered phases from spin-liquid phases.
- » Magnetotransport measurements of the electrical and/or thermal conductivities will be used to analyze the interplay of electronic, magnetic, and phononic excitations.

YOUR PROFILE

- » Master's degree in physics with a background in experimental solid state physics
- » Basic knowledge of magnetic, thermodynamic, and transport properties of solids
- » Interest in specialized low-temperature experimental setups
- » High motivation, commitment, creativity, and excellent communication skills

WE OFFER

- » An exciting research project at the forefront of research on quantum materials
- » Work in an international collaborative team

- » A diverse working environment with equal opportunities
- » Support in balancing work and family life
- » Extensive advanced training opportunities
- » Occupational health management offers
- » Flexible working time models
- » Opportunity to work remotely

The University of Cologne promotes equal opportunities and diversity. Women will be considered preferentially in accordance with the Equal Opportunities Act of North Rhine-Westphalia (Landesgleichstellungsgesetz – LGG NRW). We also expressly welcome applications from all suitable candidates regardless of their gender, nationality, ethnic and social origin, religion, disability, age, sexual orientation and identity.

The position is available from 01.08.2025 on a part-time basis (19,92 hours per week for the first year and 29,87 hours per week afterwards). The contract is initially limited until 30.06.2028. If the applicant meets the relevant wage requirements and personal qualifications, the salary will be based on remuneration group 13 TV-L of the pay scale for the German public sector.

Please apply online with proof of the required qualifications (including a transcript of records) without a photo under: <https://jobportal.uni-koeln.de>. The reference number is Wiss2505-11. The application deadline is 16.06.2025. Concerning the task/project please contact Professor Dr Thomas Lorenz (tl@ph2.uni-koeln.de). Queries relating to the application should be directed to Dr Matteo Cacco (sfb1238.buero@ph2.uni-koeln.de) and take a look at our [FAQs](#).



HR EXCELLENCE IN RESEARCH

