



UNIVERSITY
OF COLOGNE

Faculty of Mathematics and Natural Sciences

PhD Student Position (f/m/x) in “Quantum Hall calorimetry of quantum materials”

Institute of Physics II | Bocquillon Working Group

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.

One PhD Student position is available in the group of Professor Erwann Bocquillon, which specializes in the quantum transport of quantum materials (<https://ph2.uni-koeln.de/en/research-groups/bocquillon>).

YOUR TASKS

- » This PhD project will develop a new ultra-sensitive quantum calorimeter to explore how heat flows through exotic quantum materials. By combining layered crystals with quantum Hall devices, the researcher will be able to probe elusive states of matter with unprecedented precision—starting with $\alpha\text{-RuCl}_3$, a leading candidate for hosting Majorana-like particles and a quantum spin liquid. The project offers an opportunity to build new cutting-edge techniques in collaboration with partners at the University of Tokyo (Japan), while tackling some exciting open questions in condensed-matter physics.

YOUR PROFILE

- » The candidate should possess an excellent academic record and hold a Masters in Physics, preferably with a major in Quantum Physics or Condensed Matter Physics. Research experience in one or several of the following fields will be appreciated: cryogenic systems, quantum transport measurements, nano-fabrication and cleanroom techniques
- » An excellent command of English, as well as high motivation, commitment, good communication skills and team spirit are expected.

WE OFFER

- » An exciting research project at the forefront of research on quantum matter
- » 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

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 1 January 2027 on a part-time basis (29,87 hours per week). The position is to be filled for a fixed term until 31 December 2029. If the applicant meets the relevant wage requirements and personal qualifications, the salary is 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 without a photo under: <https://jobportal.uni-koeln.de>. The reference number is Wiss2610-07. The application deadline is 30 November 2026.

For further inquiries, please contact Professor Dr Erwann Bocquillon (bocquillon@ph2.uni-koeln.de) (scientific part) or Dr Matteo Cacco (cacco@ph2.uni-koeln.de) (application questions) and take a look at our [FAQs](#).



HR EXCELLENCE IN RESEARCH

