

PhD in Neutron spectroscopy of Quantum Magnets.

The Laboratory for Quantum Magnetism ([LQM](#)) is looking for a motivated candidate who wishes to perform his/her Ph.D. in a stimulating and dynamic atmosphere at the forefront of scientific research in magnetism and solid-state physics in general. LQM is part of the Swiss Federal Institute of Technology in Lausanne (EPFL), a world-renowned science and education center, offering prospective students an ideal environment to start their scientific carrier as well as an excellent connection with industry.

Project Description: Quantum magnets serve as ideal testing grounds for many-body quantum physics. Like many other fields of research, it is propelled like a ping-pong ball between theory and experiment. We use neutron spectroscopy to directly probe the magnetic excitations of different quantum magnetic compounds and in this way obtain an understanding of the dynamics of the systems. The experiments are carried out at international large-scale research facilities and the nature of the work is highly collaborative.

With this project you will gain expertise in:

- All practical parts of planning and carrying out neutron scattering experiments such as sample holder design and crystal cutting and alignment.
- Data analysis and programming skills for processing inelastic neutron scattering data
- Modeling of quantum magnetic systems and excitations
- Communication skills, both written in the form of beamtime proposals and scientific publications as well as oral presentations at conferences and workshops

The successful candidate is expected to hold a master's degree in physics or equivalent. In addition, the following qualifications are desired:

- Good understanding of quantum mechanics and solid-state physics
- Proficiency in programming, simulations, and data analysis
- Practical skills (designing, building, automating measurement setups)
- Curious, systematic, and logical mind
- Ability to work independently but also as a part of a team
- Hands-on as well as analytical skills

The selected PhD student will need to enroll in the Physics program of the EPFL doctoral school. After one year of successful probation, the initial contract will be extended up to a total of four years. Doctoral school information and employment conditions at EPFL are described at:

- <https://www.epfl.ch/education/phd/programs/edpy-physics>
- <https://www.epfl.ch/education/phd/doctoral-studies-structure/doctoral-students-salary>
- <https://www.epfl.ch/about/working/working-at-epfl/employment-conditions>

Starting date: As soon as possible.

For inquiries and applications, please contact us at lqm.jobs@epfl.ch. Applications should include CV, grade transcript and names of 3 persons who can be contacted for reference letters.