

Postdoctoral fellowship : Quantum Magnonic; coupling magnon and qubit.

Institut Néel/CNRS – Grenoble

GENERAL INFORMATION

- Working place : Institut Néel/CNRS (Grenoble)
- Duration : 2 years + possible extension
- Salary : Between 2805.35 € et 3963.98 € depending on experience
- Starting date : 2025

PROJECT

The position aims at developing low temperature experiments using magnonic systems and qubits. In particular, we aim at first investigating magnonic properties of YIG microstructures coupled to superconducting circuits at very low temperature. In a second time, the coupling between a magnon mode and a qubit will be explored. Based on this interaction, we aim at developing magnetometry protocols² and characterize exotic magnetic structure at very low temperature.

Therefore, the research involves participation in the design of superconducting devices at Neel institute, very low temperature characterization of the magnonic system, qubit control, data acquisition and analysis followed by publications and communication in conferences.

THE CANDIDATE

- Holds a PhD in quantum physics or magnonic or related field
- Good capacity to communicate in English (written and oral)
- Experience with quantum measurements, microwave electronics is a plus

THE TEAM

Institut Néel, is a large laboratory covering many different fields of condensed matter physics. The Quantum coherence team aims at exploring quantum phenomena in nanoelectronics devices. This project is a collaborative work between LETI and other teams at Néel Institute (Quanteca and Micromagnetic and Nanomagnetic Materials).

FOR MORE DETAILS, PLEASE CONTACT

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FURTHER READING

¹ Klemt et al. Npj Quantum Information (2023), Piot et al. Nat. Nanotechnol. (2022)

² Casola et al. Nat. Rev. Mat. (2018) ; van der Sar et al. Nat. Comm. (2015)