RobustSuperQ – Job offer

2 to 3-year post-doc position

Interfacing superconducting quantum processor to a quantum memory

Job description

You will work on developing, building and testing a two-part hybrid quantum system able to store and retrieve quantum bits generated by a superconducting circuit in a quantum spin memory. Electronic spins have demonstrated coherence times which so far exceed what is achievable in a superconducting qubit, and spin-based quantum memories [1] using echo-silencing protocols at microwave frequency [2,3] have already been demonstrated. The operation of such memories have so far only been realized using coherent pulses, the goal of this project is to build an interconnect bridge between a superconducting circuits containing a few quantum bits and a quantum memory and demonstrate its operation on quantum states, as well as benchmark many-mode storage and many-mode state creation protocols.

[1] C. Grezes et al., Phys. Rev. X 4, 021049 (2014).
[2] B. Julsgaard and K. Mølmer, Phys. Rev. A 88, 062324 (2013).
[3] V. Ranjan, et al., ArXiv:2206.04488 (2022).

Location

In Lyon, at the Laboratoire de Physique de l'École Normale Supérieure de Lyon, in the Quantum circuit group. http://physinfo.fr

Starting date

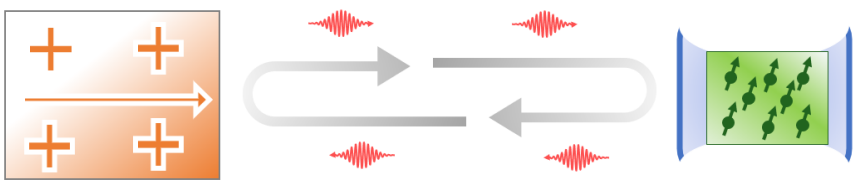
October 2022 and beyond

Job requirements

The candidate must have a PhD in a topic related to experimental quantum physics.

How to apply

Please send your application to audrey.bienfait@ens-lyon.fr
Required documents*: CV, e-mail supervisor/ recommendation contact*



PROGRAMME ET EQUIPEMENTS PRIORITAIRES DE RECHERCHE QUANTIQUE

FRANCE QUANTUM BASIC RESEARCH PROGRAMME

https://www.robustsuperq.fr