



MSCA

Marie Skłodowska-Curie Actions

*Developing talents,
advancing research*

Postdoctoral Fellowships



CALL FOR APPLICATIONS 2025 – FELLOWS

Supervisor	Christina Psaroudaki
Supervisor page	https://sites.google.com/view/christinapsaroudaki/home
Host Institution	Centre National de la Recherche Scientifique (CNRS) https://www.cnrs.fr/en
Research Lab	Laboratoire de Physique de l'Ecole Normale Supérieure https://www.lpens.ens.psl.eu/
Research Team	Mesoscopic physics https://www.lpens.ens.psl.eu/equipe-02/

Project Title

Error Mitigation and Quantum Control in Skyrmion Qubits

Project Description

Quantum computing harnesses quantum mechanics to revolutionize computation, but challenges in qubit control and scalability persist. Magnetic skyrmions, resilient topological spin textures, offer promise as quantum information carriers via their helicity. This proposed project explores skyrmion helicity dynamics to develop precise qubit control, mitigate decoherence, and enable entanglement using magnons and cavity photons, laying the foundation for skyrmion-based quantum platforms.

Keywords

quantum bits, magnetic skyrmions, qubit control

Description of the Host Research Lab

The Laboratoire de Physique de l'École Normale Supérieure is an interdisciplinary fundamental research laboratory in physics and its interfaces. The laboratory's scientific activities cover a vast exploratory field in fundamental or applied physics, experimental or theoretical, and are organized into six axes: Astrophysics, Biophysics, Fluids and Interfaces, Fundamental Interactions, Quantum Materials and Devices, Statistical Physics.»

To submit your application, please send an email with the required documents to
msca-pf@sorbonne-universite.fr