

Position type	Postdoctoral researcher (full-time, fixed-term contract)
Subject area	Combinatorics / Graph theory / Quantum groups
Location	Laboratoire de Mathématiques d'Orsay (LMO), Université Paris-Saclay, France
Start date	October 1, 2027 (negotiable)
Duration	2 years
Application deadline	January 22, 2027

Position description

We are inviting applications for a two-year postdoctoral position in pure mathematics. The position is funded by the ANR project **CroCQG** (*Crossroads in the theory of compact quantum groups*), coordinated by Amaury Freslon and hosted at the [Laboratoire de Mathématiques d'Orsay](#).

The project

CroCQG brings together French researchers working on compact quantum groups, a field at the crossroads of operator algebras, Hopf algebras, tensor categories, combinatorics and noncommutative probability. The project is organized along three main lines of research:

- ▶ Quantum groups as quantum symmetries of combinatorial and topological objects;
- ▶ Probabilistic methods in the quantum setting;
- ▶ New categorical, dynamical and combinatorial tools for the study of operator algebras associated with quantum groups.

The project is coordinated by A. Freslon (Univ. Paris-Saclay) and U. Franz (Univ. Marie et Louis Pasteur, Besançon). More information is available on the [project webpage](#).

Research topics

The postdoctoral researcher will work on quantum symmetries of graphs and related combinatorial structures. This subject has recently been revived by its connections with quantum information theory and algebraic graph theory: many classical questions in graph theory now have quantum counterparts, and answering them requires a strong combinatorial perspective. Possible topics include:

- ▶ Quantum isomorphisms of graphs and the behavior of graph invariants under them;
- ▶ Quantum automorphism groups of natural families of graphs;
- ▶ Quantum graphs and their connections with quantum information theory.

The precise research program will be defined jointly with the successful candidate, according to their background and interests.

Profile

We are primarily looking for candidates with a strong background in **graph theory, or more generally in combinatorics and discrete mathematics**, so as to complement the expertise already present in the team. **No prior knowledge of quantum groups or operator algebras is required**, but candidates should be willing to learn these topics. Applicants from neighboring areas with strong combinatorial skills (e.g. quantum information, algebraic combinatorics) are also encouraged to apply. Candidates must hold a PhD by the start date.

Working environment

The postdoctoral researcher will be based at [LMO](#) in Orsay, one of the largest mathematics departments in France, and will be supervised by A. Freslon. Close interactions are expected with the other members of the Paris node of the project (P. Fima, R. Martos and P. Pournajafi), as well as with the whole consortium, in particular during project meetings and scientific events. Travel funds are available for research visits and conferences. The position carries no teaching duties.

Salary and benefits

The gross monthly salary ranges from €3,100 to €4,300 depending on experience, i.e. approximately €2,450 to €3,400 net per month before income tax. The position includes French social security coverage, including public health insurance.

How to apply

Applications should be sent by e-mail to amaury.freslon@universite-paris-saclay.fr, with the subject line “CroCQG postdoc application”, and should include:

- ▶ A cover letter;
- ▶ A curriculum vitae;
- ▶ A list of publications;
- ▶ A research statement;
- ▶ Two letters of recommendation, to be sent directly by their authors to the same address.

Deadline: January 22, 2027

Contact: Amaury Freslon, amaury.freslon@universite-paris-saclay.fr