

# Francesca Paganelli

## Ph.D. student in Mathematics

My main research interest is representation theory. In particular I am currently working on shifted quantum affine algebras. I like to see the links between their representations and other algebraic objects such as cluster algebras. I am also curious about quiver varieties and representations of finite-dimensional algebras.

### Personal information

- Date of birth: 09/09/1999, Rimini, Italy
- Email: [francesca.paganelli@uniroma1.it](mailto:francesca.paganelli@uniroma1.it)

### Education

- 2023- : Ph.D. course Mathematical Models for Engineering, Electromagnetism, and Nanosciences of **Sapienza University of Rome**, Department of basic and applied sciences for engineering (SBAI). Dual Ph.D programme with **University Paris Cité**, faculty of Mathematics. Supervised by **Giovanni Cerulli Irelli** (Sapienza university of Rome) and **David Hernandez** (university Paris Cité).
- 2021-2023: Master degree in Mathematics at University of Bologna, Italy. Grade Achieved: 110/110 cum laude. Title of thesis: "Symmetries of q-characters of representations of quantum affine algebras," supervised by Nicoletta Cantarini and David Hernandez.
- 2018-2021: Bachelor degree in Mathematics at the University of Bologna, Italy. Grade Achieved: 105/110. Title of thesis: "Ado's Theorem," supervised by Nicoletta Cantarini.
- 2018: Scientific high school diploma.

### Teaching

- September 2024 – December 2024: Tutor for exercise session (Travaux Dirigés) for the course Mathématiques élémentaires of Université Paris Cité (UFR Physique)
- September 16-20, 2024 : Tutor for crash course in Mathematics (Precorsi di matematica) for Sapienza University, faculty of Engineering.
- Autumn 2022: Online tutoring for the Algebra 1 course of the University of Bologna. Weekly correction of assignments.

### Attended conferences and workshops

- *International Conference of Representations of Algebras (ICRA)*, Shanghai Jiao Tong University, July 31- August 9, 2024
- *Higher homological algebras and related topics*, University of Nanjing, July 26-29, 2024.
- *Algèbres Vertex, théorie géométrique des représentations et groupes quantiques*, CIRM (Luminy), 10-14 juin, 2024.
- *Quiver Representations, Quiver Varieties and Combinatorics*, University of Bologna, May 22-26, 2023.
- *Théorie des représentations à Lyon*, Lyon, June 26-30, 2023.

### Talks

- *An introduction to monoidal categorification of cluster algebras*, 14/11/2024, Séminaire Pampers, Institut de recherche mathématique de Rennes
- *Monoidal categorification of cluster algebras: how to enjoy quantum groups with the help of combinatorics*, 06/11/2024, Rencontre master-doctorat, Université Paris Cité.

## **Fundings**

- 2024: funding for young researchers *Avvio alla ricerca* by Sapienza University.
- 2023: Internship funding by Institut de Mathématiques de Jussieu-Paris Rive Gauche.

## **Languages**

- Italian: native language.
- English: advanced.
- French: advanced.

Paris, 14/11/2024