Tommaso Scognamiglio

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Research interests

My research interests revolve around the interactions between representation theory, combinatorics and the computation of the cohomology of moduli spaces such as, for instance, quiver varieties, character varieties and moduli spaces of Higgs bundles.

Key words

Quiver representations, quiver varieties, representations of finite reductive groups, character varieties for Riemann surfaces, moduli spaces of Higgs bundles, non-abelian Hodge theory

Education

- 2020– PhD in Mathematics, Université Paris Cité-IMJ PRG, under the supervision of Emmanuel Letellier
- 2017–2019 Master in Mathematics, Universitá di Pisa- Scuola Normale Superiore, Pisa, Italy.
- 2015-2017 Bachelor in Mathematics, Universitá di Pisa- Scuola Normale Superiore, Pisa, Italy.

Preprints and publications

- 2022 **T. Scognamiglio**, *On the cohomology of character stacks for non-orientable surfaces*, *Geometriae Dedicata*, **218**, 13 (2024).
- 2023 **T. Scognamiglio**, *A generalization of Kac polynomials and tensor product of representation of* $GL_n(\mathbb{F}_q)$, *Transformation groups*, (2024.)
- 2023 **T. Scognamiglio**, *Cohomology of non-generic character stacks*, arxiv :2310.01306.

Talks

- 02/2023 **Geometry Seminar**, *Universitá di Firenze*, Character varieties for non-orientable surfaces.
- 04/2023 **Differential Geometry Seminar**, *Heidelberg University*, Character varieties for nonorientable surfaces.
- 01/2024 Algebra and Geometry seminar, *University of Bologna*, Character stacks and varieties for Riemann surfaces.
- 01/2024 **Groups, Representations and Geometry seminar**, *IMJ-PRG*, Character stacks and varieties for Riemann surfaces.
- 01/2024 **PhD preprint seminar**, *Université Paris Cité*, Representations of quivers and finite general linear groups.
- 05/2024 **Algebraic Geometry seminar**, *EPFL*, Character stacks and varieties for punctured Riemann surfaces.
- 05/2024 **Algebra and Geometry seminar**, *ICMAT*, Character stacks and varieties for punctured Riemann surfaces.

07/2024 **Algebra seminar**, *Karlsruhe University*, Muiltiplicities for tensor product of representations of finite reductive groups.

Research visits

04/2023 Heidelberg University, Invited by Florent Schaffhauser.05/2024 ICMAT, Invited by Ángel Gonzalez Prieto.

Teaching experience

2023-2024 Groups and Arithmetics, for second year students in Informatics, Université Paris Cité.

2023-2024 **Elementary analysis and algebra**, for first year students in Physics, Université Paris Cité.

- 2023-2024 Algebra, for third year students in Mathematics, Université Paris Cité.
- 2023-2024 Analysis, for second year students in Mathematics, Université Paris Cité.
- 2022-2023 Analysis, for second year students in Mathematics, Université Paris Cité.
- 2021-2022 Analysis, for third year students in Engineering, Université Paris Cité.