

# Thibault Juillard

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## Employment History

- Since 2024 📌 **Teacher and researcher, École polytechnique**, CMLS, Palaiseau, France.  
Temporary position.
- Since 2022 📌 **Ph.D. student, Université Paris-Saclay**, Institut de mathématiques d'Orsay, France.

## Education

- Since 2022 📌 **Ph.D., Université Paris-Saclay**, Orsay, France.
- 2020 – 2022 📌 **M.Sc. Mathematics, École polytechnique fédérale de Lausanne**, Switzerland.  
Thesis title: *Nilpotent orbits, Slodowy slices and BRST cohomology*.
- 20017 – 2021 📌 **M.Sc. Mathematics, École polytechnique**, Palaiseau, France.

## Research Publications

### Journal Articles

- 1 N. Genra and T. Juillard, “Reduction by stages for affine  $W$ -algebras,” 2025, Preprint.
- 2 N. Genra and T. Juillard, “Reduction by stages for finite  $W$ -algebras,” *Mathematische Zeitschrift*, vol. 308, no. 1, p. 15, 2024.

## Talks

### Conferences


- June 2024 📌 *Reduction by stages for  $W$ -algebras*. Conference “Vertex algebras, geometric representation theory and quantum groups”, CIRM, Luminy, France.
- 📌 *Chiralisation of reduction by stages*. Conference “Groups and their actions”, Levico Terme, Italy.
- January 2024 📌 *Reduction by stages for  $W$ -algebras*. Winter school in mathematical physics, Les Diablerets, Switzerland.
- October 2022 📌 *Reduction by stages for finite  $W$ -algebras*. Workshop “Quantum symmetries”, Centre de recherche en mathématiques, Montréal, Canada.

### Seminars






- January 2025 📌 *Reduction by stages for affine  $W$ -algebras, a geometric approach*. Representation theory seminar, I2M, Luminy, France.
- December 2024 📌 *Reduction by stages for affine  $W$ -algebras, a geometric approach*. Mathematical physics seminar, Hamburg, Germany.
- November 2024 📌 *Reduction by stages: from Slodowy slices to affine  $W$ -algebras*. Seminar “Groups, representations and geometry”, Paris Cité, France.
- October 2024 📌 *Reduction by stages for affine  $W$ -algebras*. Algebra and representation theory seminar, Tor Vergata, Rome, Italy.
- March 2024 📌 *Reduction by stages for  $W$ -algebras*. Seminar “AGATA”, Montpellier, France.

## Talks (continued)

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January 2024     *Reduction by stages for W-algebras*. Algebra seminar, ICJ, Lyon, France.







### Reading groups

- March 2024     *Examples of GIT constructions: quiver varieties*. Reading group “Good moduli stacks”, IMO, Orsay, France.
- February 2024     *Equivariant sheaves and linearisations in GIT*. Reading group “Good moduli stacks”, IMO, Orsay, France.
- November 2023     *Geometric Invariant Theory*. Reading group “Good moduli stacks”, IMO, Orsay, France.
- April 2023     *Double Poisson vertex algebras*. Workshop “Hall algebras and vertex algebras in enumerative geometry”, Skye, Scotland.
- January 2023     *Character variety and tautological classes*. Reading group “P = W Conjecture”, IMO, Orsay, France.

## Teaching



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### Exercises

- 2024 – 2025     *Euclidean and Hermitian spaces*, Bachelor 2, Polytechnique, Paris, France.
- 2023 – 2025     *Differential geometry*, Bachelor 3, Polytechnique, Paris, France.
- 2022 – 2023     *Series of functions, differential equations*, Bachelor 2, Polytechnique, Paris, France.
- 2021     *Geometry*, Bachelor 2, EPFL, Lausanne, Switzerland.
-  *Linear algebra 1*, Bachelor 1, EPFL, Lausanne, Switzerland.
-  *Analysis 1*, Bachelor 1, EPFL, Lausanne, Switzerland.

## Mathematical interests



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- Representation theory**     Simple Lie algebras, vertex algebras, W-algebras, homological algebra, quantisation.
- Algebraic geometry**     Poisson geometry, algebraic groups, geometric invariant theory, Slodowy slices, nilpotent orbits.


## Miscellaneous Experience

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### Event organisation

- 2023 – 2025     **RéGA**, IHP, Paris, France.  
Seminar for young researchers in algebraic geometry.
- 2022 – 2023     **Popularisation seminar**, IMO, Orsay, France.  
Ph.D. student seminar.

### Popularisation

- August 2024     **APEX-Maths**, Resita, Romania.  
3-week program to initiate high school students to mathematical research.

## Miscellaneous Experience (continued)

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July, 2021 – 2024



**Astromaths**, Ardèche, France.

2-week science camp in mathematics and astronomy for high school students.