

# Pietro Mesquita Piccione

## Résumé

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### Education

- 2022 – 2025 **PhD in Mathematics**, *Institut des mathématiques de Jussieu*, Sorbonne Université, Paris, France  
Advisors: Sébastien Boucksom and Tat Dat Tô
- 2021 – 2022 **Master's Degree in Mathematics**, *Institut des mathématiques de Jussieu*, Sorbonne Université, Paris, France
- 2017 – 2021 **Bachelor's degree in Mathematics**, *Universidade de São Paulo*, USP, São Paulo, Brazil  
Prize for outstanding performance.

### Research projects and grants

- 2022 – 2025 **MathInParis2020**, *Scholarship for a PhD in Paris*, Cofunded by Marie Skłodowska-Curie Actions, FSMP
- 2021 – 2022 **PGSM Scholarship**, *Scholarship for a Master's degree in Paris*, Fondation Sciences mathématiques de Paris
- 2020 – 2021 **Morse Theory**, *Undergraduate Research Project*, FAPESP  
Grant FAPESP 2020/04871-0

### Articles

- 2024 **A non-Archimedean theory of complex spaces and the csc-K problem**, *preprint*, arXiv:2409.06221

### Talks

#### The non-Archimedean approach of the Yau–Tian–Donaldson conjecture

- 2025 **Mathematics Seminar**, Aarhus University, Aarhus, Denmark
- 2024 **Séminaire de géométrie algébrique de Jussieu**, ENS, Paris, France
- 2024 **Complex Analysis Seminar**, University of Bayreuth, Bayreuth, Germany
- 2024 **Geometric Analysis Seminar**, BICMR, Beijing, China
- 2024 **KASS Seminar**, Chalmers University, Gothenburg, Sweden
- 2024 **Algebraic Geometry Seminar**, University of Glasgow, Scotland
- 2024 **Any Complex Geometry Seminar**, University of California Berkeley, US
- 2024 **Graduate Student Seminar Series**, SLMATH, Berkeley, US
- 2024 **Séminaire des Thésards**, IMJ-PRG, Université Paris Cité, France
- 2024 **Demi-Journée des doctorant.e.s de l'équipe TGA 2024**, IMJ-PRG, Sorbonne Université, France

#### A counterexample for the periodic orbit conjecture

- 2022 **Groupe de Travail : Dynamiques Sauvages**, IMJ-PRG, Sorbonne Université, France
- 2022 **A5 seminar**, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil

#### To the general public

- 2021 **A Tale of Geometry**, *S4*, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil
- 2020 **Morse Theory in 15 Minutes**, *Senior Thesis Presentation*, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil
- 2020 **Is the Earth flat? A talk about curvature**, *S4*, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil

2020 **How to solve any equation, with some conditions**, *S4, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil*

## Professional

### Visits

2024 **Special Geometric Structures and Analysis**, *SLMath, Berkeley*  
Two months visit to the program.

### Events Organized

2022 **MaThematical Days : Paul Erdős**, *Universidade de São Paulo, São Paulo, Brazil*

2021 **MaThematical Days : Emmy Noether**, *Universidade de São Paulo, São Paulo, Brazil*

2021 **MaThematical Days : Élie Cartan**, *Universidade de São Paulo, São Paulo, Brazil*

### Teaching Assistantships

2025/1 **Introduction to Riemann Surfaces**, Campus Pierre et Marie Curie, Sorbonne Université, France

2024/2 **Topology and Differentiable Calculus I**, Campus Pierre et Marie Curie, Sorbonne Université, France

2024/1 **Functional Analysis**, Campus Pierre et Marie Curie, Sorbonne Université, France

2023/2 **Topology and Differentiable Calculus I**, Campus Pierre et Marie Curie, Sorbonne Université, France

2020/2 **Introduction to Algebraic Topology**, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil

2019/2 **Introduction to Analysis**, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil

2019/1 **Differentiable functions and series**, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil

2018/2 **Calculus II**, *Escola Politecnica*, Universidade de São Paulo, Brazil

### Academic Services

2021 **Organizer of the A5 Group**, *A student runned academic group, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil*  
Over 25 weekly seminars organized

2019 **Deputy Student Representative in the Mathematics Department Council**, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil

2018 **Deputy Student Representative in the Mathematics Department Council**, Instituto de Matemática e Estatística, Universidade de São Paulo, Brazil

### Other Writings

2022  **$L^2$  techniques in Complex Geometry**, *Master Thesis, Sorbonne Université*

2021 **Morse Theory**, *Undergraduate Thesis, Universidade de São Paulo*

## Other Info

### Related Activities

2025 – Now **Reading Seminar on Kähler Ricci Flow**, Online

2021 – 2022 **Reading Seminar on Wild Dynamics**, *Groupe De Travail Dynamiques Sauvages, IMJ-PRG, Sorbonne Université*

2021 **Summer IMPA**, *Differential topology graduate course, IMPA, Rio de Janeiro, Brazil*  
Online

2020 **Summer IMPA**, *Functional Analysis graduate course, IMPA, Rio de Janeiro, Brazil*  
with financial support

2018 **Summer IMPA**, *Real Analysis, IMPA, Rio de Janeiro, Brazil*  
with financial support

### Languages

Portuguese Native Speaker  
Italian Native Speaker  
English Fluent  
Spanish Fluent  
French Fluent  
Catalan Intermediate

### Links

Lattes <http://lattes.cnpq.br/7822745238118143>  
Orcid <https://orcid.org/0000-0002-1626-0726>

### References

Reference I Sébastien Boucksom  
Reference II Tat Dat Tô  
Reference III Tamás Darvas  
Reference IV Ruadhaí Dervan