

DYLAN LAPLACE MERMOUD

Postdoctoral researcher in discrete mathematics, quantum algorithms and algebraic combinatorics
Unité de Mathématiques Appliquées, ENSTA Paris, Institut Polytechnique de Paris

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PERSONAL INFORMATION

Born in Saint-Michel (16), France, on October 25, 1996. French nationality.

AREAS OF INTEREST

Discrete mathematics, combinatorial optimization, cooperative game theory, algebraic combinatorics, quantum computing, combinatorial geometry, microeconomics.

EXPERIENCES

- | | |
|--------------|---|
| 2023 - | Postdoctoral researcher
<i>Unité de Mathématiques Appliquées, ENSTA Paris, Institut Polytechnique de Paris</i>

Quantum algorithms for combinatorial optimization. |
| 2022 - 2023 | Temporary teaching and research associate (french ATER contract)
<i>Centre d'Économie de la Sorbonne, Université Paris I Panthéon-Sorbonne</i>

Teaching (192h), doctoral research (see below). |
| 2019 - 2022 | Doctoral contract employee
<i>Centre d'Économie de la Sorbonne, Université Paris I Panthéon-Sorbonne</i>

Teaching (64h per year), doctoral research (see below). |
| 04-08 / 2019 | End-of-studies internship
<i>French Ministry of Defence</i>

Edge formation predictions in dynamic graphs. |

EDUCATION

Université Paris I Panthéon-Sorbonne

- ▷ **Doctoral degree**, Mathematics (2023).
 - Supervisors: MICHEL GRABISCH and PETER SUDHÖLTER.
 - Title: “Geometry of Set Functions in Game Theory: Combinatorial and Computational Aspects”.

Sorbonne Université

- ▷ **Master's degree**, Mathematics (2019).
 - First major in *Mathematics of Modelling*, jointly managed by Sorbonne Université, École Polytechnique and École Nationale des Ponts et Chaussées.

- Second major in *Big Data and AI*.
- Theses on the prediction of edge formation in dynamic graphs and the appearance of cooperative behaviour in repeated games.
- First year on a more abstract mathematics-oriented course: Galois theory, differential geometry, algebraic topology, number theory, Riemann surfaces, etc.

▷ **Bachelor's degree**, Mathematics (2017).

- Electives in microeconomics and computer sciences.

PUBLICATIONS

2. [Combinatorics on social configurations](#)

- LAPLACE MERMOUD, D., POPOLI, P. (2024).
Electronic Proceedings in Theoretical Computer Science, vol. 403, pp. 128-133.

1. [Minimal balanced collections and their application to core stability and other topics of game theory](#)

- LAPLACE MERMOUD, D., GRABISCH, M., SUDHÖLTER, P. (2023).
Discrete Applied Mathematics, vol. 341, pp. 60-81.

PREPRINTS

3. [Projection onto the core: An optimal reallocation to correct market failure](#)

2. [On the formation of steady coalitions](#)

1. [A responsibility value for digraphs](#) (with Rosa van den Ende)

DOCTORAL THESIS

Title	Geometry of Set Functions in Game Theory: Combinatorial and Computational Aspects		
Defense	September 8th, 2023		
Institution	Centre d'Économie de la Sorbonne, Université Paris I Panthéon-Sorbonne		
Jury	PHILIPPE BICH, Université Paris I Panthéon-Sorbonne	Chair	
	MICHEL GRABISCH, Université Paris I Panthéon-Sorbonne	Supervisor	
	JEAN-JACQUES HERINGS, Tilburg University	Examinator	
	MARINA NUÑEZ, Universitat de Barcelona	Reviewer	
	PHILIPPE SOLAL, Université Jean Monnet	Examinator	
	TAMÁS SOLYMOSI, Corvinus University of Budapest	Reviewer	
	PETER SUDHÖLTER, University of Southern Denmark	Supervisor	

TEACHING (TUTORIALS)

▷ Academic year 2023-2024

Institut Polytechnique de Paris / Université Paris-Saclay

Subject	Level	Cursus	Hours
Graphs, Games, and Operations Research	Master 1	Applied Mathematics	16h30

▷ Academic year 2022-2023

Université Paris I Panthéon-Sorbonne

Subject	Level	Cursus	Hours
Linear Programming	Master 1	Mathematics	24h
Topology and Differential Calculus	Bachelor 3	Maths/Informatics	42h
Microeconomics	Bachelor 3	Maths/Informatics	48h
Linear Algebra	Bachelor 3	Economics	36h
Linear Algebra	Bachelor 2	Maths/Informatics	30h

▷ Academic year 2021-2022

Université Paris I Panthéon-Sorbonne

Subject	Level	Cursus	Hours
Linear Programming	Master 1	Mathematics	24h
Linear Algebra	Bachelor 3	Economics	36h

▷ Academic year 2020-2021

Université Paris I Panthéon-Sorbonne

Subject	Level	Cursus	Hours
Linear Programming	Master 1	Mathematics	24h
Linear Algebra	Bachelor 3	Economics	36h

▷ Academic year 2019-2020

Université Paris I Panthéon-Sorbonne

Subject	Level	Cursus	Hours
Linear Algebra	Bachelor 3	Economics	36h
Python Programming	Bachelor 1	Maths/Informatics	48h

COMMUNICATIONS

▷ Upon invitation

1. 17th [Ordered Structures in Games and Decisions](#) conference, Paris, France (2023).
2. 22nd [Society for the Advancement of Economic Theory \(SAET\)](#) conference, Paris, France (2023).
3. [GO22: Games and Optimization 2022](#), Saint-Étienne, France (2022).

▷ Per application

4. [Programme Gaspard Monge \(PGMO\) days 2024](#), Palaiseau, France (2024).

5. 19th [European Meeting on Game Theory \(SING19\)](#), Besançon, France (2024).
6. 13th [Random Generation of Combinatorial Structures. Polyominoes and Tiling \(GASCom\)](#), Bordeaux, France (2024).
7. 18th [European Meeting in Game Theory \(SING18\)](#), Messina, Italy (2023).
8. 26th [Coalition Theory Network \(CTN\)](#) conference, Bielefeld, Germany (2023).
9. [Programme Gaspard Monge \(PGMO\) days 2021](#), Palaiseau, France (2021).
10. 16th [European Meeting in Game Theory \(SING16\)](#), Granada (remote), Spain (2021).

▷ Seminars

11. Centre d'Économie de la Sorbonne, “[Mathématique Discrète, Optimisation, Décision](#)” seminar, Paris, France (2024).
12. Université de Franche-Comté, “[young researchers](#)” day, Besançon, France (2024).
13. Institut Henri Poincaré, [Junior parisian seminar in game theory](#), Paris, France (2023).
14. ENSTA, Institut Polytechnique de Paris, OC team seminar, Palaiseau, France (2023).
15. Paris School of Economics, [Doctorissimes](#), Paris, France (2022).
16. Centre d'Économie de la Sorbonne, Maths department days, Paris, France (2022).
17. Centre d'Économie de la Sorbonne, “[Network and Games](#)” seminar, Paris, France (2022).
18. Centre d'Économie de la Sorbonne, [PhD seminar](#), Paris, France (2021).
19. Institut Élie Cartan, [PhD seminar](#), Nancy, France (2021).

REFEREEING

- ▷ Journal of Mathematical Economics.

AWARDS

- ▷ Laureate of the *Passeport pour le Master* scholarship from Sorbonne Université Foundation (69,000€).

RESPONSIBILITIES

- ▷ Member of the board of directors of Sorbonne Université (2018-2020).
- ▷ Member of the board of the mathematics department of Sorbonne Université (2018-2020).