

Antoine Prouff

CONTACT INFORMATION

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RESEARCH INTERESTS

- Microlocal and semiclassical analysis, quantum-classical correspondence principle, control of PDEs, spectral asymptotics;
- Branched optimal transport.

APPOINTMENT

Purdue University, IN, USA, [Aug. 2024–*present*]
Golomb Visiting Assistant Professor.
Mentor : [Kiril Datchev](#).

EDUCATION

Institute of Mathematics of Orsay, Université Paris-Saclay, France. [2021–2024]
PhD in Mathematics.
Advisor: [Matthieu Léautaud](#).
Title: *Quantum-classical correspondence principle and application to the control of wave and Schrödinger equations in the Euclidean space.*
(Defense: June 11, 2024.)
École normale supérieure Paris-Saclay, department of Mathematics, France. [2017–2021]
B.S. in Mathematics, June 2018; M.S. in Mathematics, June 2020.
Lycée Sainte-Geneviève, Versailles, France. [2015–2017]
Classe préparatoire aux grandes écoles MPSI – MP*.

PUBLICATIONS

- [6] Kiril Datchev, Perry Kleinhenz, and Antoine Prouff. *Geometry of wave damping on the torus*. Preprint, [arXiv:2509.05239 \[math.AP\]](#) (2025). Submitted.
- [5] Prouff, Antoine. “Smoothing effect and quantum-classical correspondence for the Schrödinger equation with confining potential”. In: **ESAIM: ProcS** 79 (2025), pp. 83–95.
- [4] Antoine Prouff. *Egorov’s theorem in the Weyl–Hörmander calculus*. Preprint, [arXiv:2412.04320 \[math.AP\]](#) (2024). Submitted.
- [3] Antoine Prouff. “Uniform stability of the damped wave equation with a confining potential in the Euclidean space”. In: **ESAIM, Control Optim. Calc. Var.** 31 (2025). Id/No 43, p. 29.
- [2] Antoine Prouff. “Observability of the Schrödinger equation with subquadratic confining potential in the Euclidean space”. In: **Analysis & PDE** 18.5 (2025), pp. 1147–1229.
- [1] Maria Colombo, Antonio De Rosa, Andrea Marchese, Paul Pegon, and Antoine Prouff. “Stability of optimal traffic plans in the irrigation problem”. In: **Discrete and Continuous Dynamical Systems** 42.4 (2022), pp. 1647–1667.

RESEARCH TALKS	AMS Sectional meeting - Mathematical Physics, Boston College, MA, USA.	[Mar. 2026]
	Analysis seminar, Illinois State University, IL, USA.	[Mar. 2026]
	Probability theory, Mathematical Physics and Analysis Seminar, Université d'Angers, France.	[Jan. 2026]
	PDE - Mathematical Physics Seminar, Université de Bordeaux, France.	[Jan. 2026]
	Analysis seminar, Université de Rennes, France.	[Jun. 2025]
	Analysis seminar, Northwestern University, IL, USA.	[Jan. 2025]
	Spectral and scattering theory seminar, Purdue University, IN, USA.	[Aug. 2024]
	Young Researchers Symposium 2024, Strasbourg, France.	[Jun. 2024]
	Itinerant Quantum Math Meetings, Università degli Studi di Milano, Italy.	[Avr. 2024]
	Analysis seminar (online), FernUniversität in Hagen, Germany.	[Oct. 2023]
	Meeting of the ANR "Adyct", Université Côte d'Azur, Nice, France.	[Sep. 2023]
	Congrès des Jeunes Chercheurs en Mathématiques Appliquées, CentraleSupélec, France.	[Sep. 2023]
	Analysis seminar, Université de Nantes, France.	[Jun. 2023]
	Analysis PhD students' seminar, Orsay, France.	[Mar. 2023]
	AGAPI Day VII, Universidad Politécnica de Madrid, Spain.	[Mar. 2022]
TEACHING	Mentor , Purdue University, USA	[Fall 2025]
	Mentored a Junior student for "Directed Reading Program". Topic: <i>Spectral theory of the Laplace operator on flat tori</i> .	
	Instructor , Purdue University, USA	
	• Linear algebra (MA265) ;	[spring 2025–26]
	• Ordinary differential equations (MA266).	[fall 2024–25]
	Teaching assistant , "Semiclapp" summer school, Université Côte d'Azur, France WKB method and propagation of singularities	[May 2024]
	Teaching assistant , Université Paris-Saclay, France.	
	• "Functions of several variables"	[fall 2021–22–23]
AWARDS AND GRANTS	• "Calculus +"	[fall 2021–23]
	• "Analysis for physicians"	[fall 2022]
	PhD Award in science from the Chancellery of the Universities of Paris	[2025]
	Junior Scientific Visibility Program from FMJH	[Mar. 2022]
	Travel grant for a 1-month research stay in Madrid	
	Erasmus+ program	[2020-2021]
	Scholarship for a 1-year research stay in Madrid	
	ENS Paris-Saclay : Successful candidate (rank: 1st) at the third-year selective exam for becoming a civil servant student.	[2019]
	Master scholarship from the Jacques Hadamard Mathematics Foundation.	[2018]

RESEARCH STAYS	Research stay , Universidad Politécnica de Madrid, Spain. [Mar. 2022] Invited by Fabricio Macià .
	Pre-doc research year , Universidad Politécnica de Madrid, Spain. [Oct. 2020–Jun. 2021] Supervisor: Fabricio Macià . Title: <i>Stabilisation of the wave equation and Observability of the Schrödinger equation in the Euclidean space.</i>
	Research internship , EPFL, Lausanne, Switzerland. [Apr.–Jul. 2019] Supervisors: Maria Colombo and Paul Pegon . Title: <i>Stability of optimal irrigation plans in branched transport.</i>
	Research internship , CMLA, ENS Paris-Saclay, France. [Jan.–Jun. 2018] Supervisors: Argyris Kalogeratos and Nicolas Vayatis . Title: <i>Towards efficient greedy dynamic resource allocation strategies.</i>
ACADEMIC SERVICE	Organization of the Mathematical Analysis PhD students’ seminar of Orsay. [2021–2022]
	Student representative for the Hadamard Doctoral School of Mathematics. [2021–2022]
OTHER TEACHING EXPERIENCES	Volunteer , Villebon-Georges Charpak Institute, Orsay, France. [2017–2018] Helping two first-year students, two hours a week, with Mathematics and Physics.
	Volunteer , Maison de quartier Prés-au-Bois, Versailles, France. [2015–2016] Helping secondary school students to do their homeworks two hours a week.
MISCELLANEOUS	Languages: French (native), English (fluent), Spanish (intermediate), Russian (elementary). Computer skills: Python, Matlab, Latex.