




# Teo Gil Moreno de Mora i Sardà

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## Education

- 2022 – 2025 **PhD in Mathematics**, *Université Paris-Est Créteil, Universitat Autònoma de Barcelona*, (cotutelle)  
**Thesis:** A metric approach to the study of manifolds of positive scalar curvature.  
Supervisors: Stéphane Sabourau, Florent Balacheff  
Expected defense date: 29 September 2025
- 2021 – 2022 **M2 Master in Fundamental Mathematics**, *Sorbonne Université, Université Paris Cité, Université Sorbonne Paris Nord, France*  
**Thesis:** Filling volume minimality for metrics close to the Euclidean metric.  
Supervisor: Stéphane Sabourau
- 2017 – 2021 **BSc in Mathematics**, *Universitat Autònoma de Barcelona, Spain*  
**Thesis:** Generalizations of the first Minkowski's theorem from a systolic geometry perspective.  
Supervisor: Florent Balacheff
- 2015 – 2021 **BSc in Physics**, *Universitat Autònoma de Barcelona, Spain*  
**Thesis:** Dynamical Superfluid-Insulator Transition of Bose–Einstein condensates in optical lattices.  
Supervisor: Verònica Ahufinger

## Publications

- Preprints T. Gil Moreno de Mora Sardà, *Urysohn width of hypersurfaces and positive macroscopic scalar curvature*. arXiv:2504.06737 (2025)
- [2] F. Balacheff, T. Gil Moreno de Mora Sardà and S. Sabourau, *Complete 3-manifolds of positive scalar curvature with quadratic decay*. Math. Ann. 392, 4361–4389 (2025)
- [1] F. Balacheff and T. Gil Moreno de Mora Sardà, *Isosystolic inequalities on two-dimensional Finsler tori*. EMS Surv. Math. Sci. 11, no. 2, 205–233 (2024)

## Talks

### Talks in conferences

- Jul 2025 Convergence of Scalar Curvature 2025 Summer Workshop, *Online*
- Jun 2025 Flows and Singular Spaces, *Centre Henri Lebesgue*, Nantes, France
- Apr 2025 Rencontre de l'ANR OrbiScaR, *Université Paris-Est Créteil*, France
- Mar 2025 Systolic and Diastolic Geometry, *Instituto de Matemática Pura e Aplicada*, Rio de Janeiro, Brazil
- Nov 2024 Reunión de investigadores jóvenes de la REAG, *Universidad de Santiago de Compostela*, Spain
- Oct 2024 Math SOMMa Junior Meeting, *Centre de Recerca Matemàtica*, Barcelona, Spain

- Nov 2023 Forum des jeunes mathématicien-nes, *Université Libre de Bruxelles*, Belgium
- May 2023 Journées des Doctorants du LAMA, *Université Gustave Eiffel and Université Paris-Est Créteil*, France
- Mar 2020 Bernardo Cascales Functional Analysis School, *Universidad de La Laguna*, Spain

#### Seminar talks

- Jul 2025 Geometry Seminar, *University of Göttingen*, Germany
- Jul 2025 Geometry Seminar, *Max Planck Institute*, Leipzig, Germany
- Apr 2025 Séminaire de Théorie Spectrale et Géométrie, *Institut Fourier*, Grenoble, France
- Feb 2025 Séminaire des Doctorants, *Institut Élie Cartan de Lorraine*, Nancy, France
- Dec 2024 Séminaire Gaston Darboux, *Institut Montpelliérain Alexander Grothendieck*, Montpellier, France
- Dec 2024 Geometry and Topology Seminar, *Université du Luxembourg*, Luxembourg
- Dec 2024 Hodge Club, *University of Edinburgh*, United Kingdom
- Oct 2024 Séminaire de Géométrie, *Institut de Mathématiques de Bordeaux*, France
- Jun 2024 Seminari de Geometria, *Universitat Autònoma de Barcelona*, Spain
- May 2024 Séminaire de Géométrie, *Institut de Mathématiques de Jussieu - Paris Rive Gauche*, France
- Apr 2024 Colloque de Géométrie, *Université Paris-Est Créteil*, France
- Apr 2024 Séminaire des doctorants du LAMA, *Université Paris-Est Créteil*, France
- Jun 2023 Seminari Informal de Matemàtiques de Barcelona, *Universitat de Barcelona*, Spain
- Mar 2023 Seminari de Geometria, *Universitat Autònoma de Barcelona*, Spain

#### Poster presentations

- Nov 2024 Curvature and Geometric Analysis in Rome, *Sapienza Università di Roma*, Italy
- Jun 2024 European Doctorate School of Differential Geometry, *Instituto de Matemáticas de la Universidad de Granada*, Spain

### Teaching

- Sep 25–Dec 25 Analyse (L2 Économie et Gestion) *Université Paris-Est Créteil*, 36h Lectures and Tutorials
- Sep 25–Dec 25 Calculus I (L1 Physique) *Université Paris-Est Créteil*, 30h Lectures and Tutorials
- Jan 25–Apr 25 Analyse Réelle (L1 Mathématiques) *Université Paris-Est Créteil*, 36h Tutorials
- Jan 24–Apr 24 Analyse Réelle (L1 Mathématiques) *Université Paris-Est Créteil*, 36h Tutorials
- Sep 22–Dec 22 Calculus 1 (L1 Chimie) *Université Paris-Est Créteil*, 30h Lectures and Tutorials

### Organization of Scientific Activities

- May 2024 Journées des Jeunes Chercheurs-ses du LAMA, *Institut Henri Poincaré*, France (22-24 May 2024)
- 2022 – 2024 Séminaire des doctorants, *Laboratoire d'Analyse et Mathématiques Appliquées*, *Université Paris-Est Créteil*, France

### Awards and Scholarships

- 2021 – 2022 **PGSM Master Scholarship**, granted by the *Fondation Sciences Mathématiques de Paris*.
- 2020 – 2021 **Beca de Colaboración grant BDNS 512590** by the *Spanish MEFP*
- 2015 – 2021 Academic Merit State Scholarship, funded 33% of my undergraduate degrees.
- 2015 Extraordinary University Entrance Examination Award, awarded by the *Generalitat de Catalunya*.
- 2015 University Entrance Scholarship, awarded by the *Fundació Catalunya La Pedrera*.

## Languages

**Catalan** Native

**English** Fluent  
*C2 Level - Cambridge Certificate*

**Japanese** Intermediate  
*B1 Level - JLPT N3*

**Spanish** Native

**French** Fluent  
*DEL F B2*

## Computer skills

**Programming Languages** Python, C, R

**Other** SageMath,  $\text{\LaTeX}$

## Undergraduate Research Experience

Sep 20 –Jul 21 **Research Assistant, Mathematics department UAB, Barcelona, Spain**

**Supervisor:** Florent Balacheff

Research project in systolic geometry, with further development of my BSc thesis.

Jul 20 –Sep 20 **ICMAT Introduction to Research Program, Madrid, Spain**

**Supervisor:** Francisco Presas

Project on contact geometry and Legendrian submanifolds, and their application to the space of light geodesics of a Lorentz manifold.

Jul 2019 **IFISC Summer Undergraduate Research Internship, Palma de Mallorca, Spain**

**Supervisor:** David Sánchez

Project on the analysis of language variation in the United Kingdom using Twitter data and Big Data techniques.

Jul 18 – Oct 18 **ICFO Summer Fellows Program, Barcelona, Spain**

**Supervisor:** Leticia Tarruell – Ultracold Quantum Gases Group

Project on the development of an active stabilization system in order to stabilize the magnetic field fluctuations in the experimental set-up of the group.

Jul 2016 **ICFO Introductory internship, Barcelona, Spain**

**Supervisor:** Miguel Ángel García – Quantum Optics Theory Group

Programming based experience on the study of random walks on different geometrical settings.

## Attended conferences and schools

Jun 2025 Flows and Singular Spaces, *Centre Henri Lebesgue*, Nantes, France

Apr 2025 Rencontre de l'ANR OrbiScaR, *Université Paris-Est Créteil*, France

Mar 2025 Systolic and Diastolic Geometry, *Instituto de Matemática Pura e Aplicada*, Rio de Janeiro, Brazil

Jan 2025 Analysis and Geometry on Groups and Spaces Winter School, *Hausdorff Research Institute for Mathematics*, Bonn, Germany

Nov 2024 Reunión de investigadores jóvenes de la REAG, *Universidade de Santiago de Compostela*, Spain

Nov 2024 Curvature and Geometric Analysis in Rome, *Sapienza Università di Roma*, Italy

Oct 2024 Math SOMMa Junior Meeting, *Centre de Recerca Matemàtica*, Barcelona, Spain

Aug 2024 Metric Geometry and Geometric Measure Theory, *Université de Fribourg*, Switzerland

Jun 2024 European Doctorate School of Differential Geometry, *Instituto de Matemáticas de la Universidad de Granada*, Spain

Mar 2024 Surfaces, Manifolds and Related Topics, *Université du Luxembourg*, Luxembourg

Nov 2023 Forum des jeunes mathématicien-nes, *Université Libre de Bruxelles*, Belgium

Oct 2023 Probability and Geometry in, on and of non-Euclidian spaces, *Centre International de Rencontres Mathématiques*, Marseille, France

Jun 2023 Interactions between geometry and topology, *Banyuls de la Marenda*, France

Mar 2023 Geometry, probability and their synergies, *Les Diablerets*, Switzerland

Nov 2022 Paroles aux jeunes chercheuses et chercheurs en géométrie et dynamique, *Institut Mathématique d'Orsay*, France

Sep 2022 Workshop on Topological Methods in Geometry, *Centre de Recerca Matemàtica*, Barcelona, Spain

Mar 2020 Bernardo Cascales Functional Analysis School, *Universidad de La Laguna*, Spain