Antonio Hidalgo Torné

Curriculum Vitae (December 2025)

Personal details

Name:	Antonio Hidalgo Torné
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Current position

2024-Present:	**Postdoctoral researcher**
Institution:	Max Planck Institute for Mathematics in the Sciences (Leipzig, Germany)
Group:	Applied Analysis (leaded by László Székelyhidi)

Education

2019-2024: **Mathematics (PhD)**
- Title: Evolution of Navier-Stokes and Euler vortex-filaments
- Institution: Universidad de Sevilla (US & IMUS), Spain
- Advisor: Francisco Gancedo
- Thesis awarded *Cum Laude* and *International Mention*

2018-2019: **Mathematics and Applications (Master's Degree)**
- Institution: Universidad Autónoma de Madrid (UAM), Spain

2013-2018: **Mathematics and Physics (Double Bachelor's Degree)**
- Institution: Universidad de Sevilla (US), Spain

Research Fellowships

2020-24 **Predoctoral fellowship "FPU 2019"**
- Funded by : Government of Spain
- Institution: Universidad de Sevilla (US)

2018-20 **Research fellowship**
- Funded by: ERC Starting Grant FLUID-INTERFACE 639227
(P.I: Francisco Gancedo)
- Institution: Instituto de Matemáticas de la Universidad de Sevilla (IMUS)

2017-18 **Introduction to Research (Colaboración) Scholarship**
- Funded by: Government of Spain
- Institution: Universidad de Sevilla (US)

Awards

- 2019: "Master's Degree Extraordinary Award" (Best academic record 2018-19)
  - Universidad Autónoma de Madrid (UAM), Spain
- 2018: "Bachelor's Degree Extraordinary Award" (Best academic record 2013-18)
  - Universidad de Sevilla (US), Spain

- 2012-13: "Several awards at Scientifics Olympiad" To remark:
  -Two silver medals at Spanish Mathematical Olympiad
  -Golden medal at Spanish Physics Olympiad
  -Bronze medal at Iberoamerican Physics Olympiad
  -Silver medal at Spanish Chemistry Olympiad

Publications and preprints

1. *Pathological solutions of Navier-Stokes equations on $\mathbb{T}^2$ with gradients in Hardy spaces*, with J. Burczak. Submitted, 2025, arXiv:2509.08168.
2. *Dissipative Euler Flows Originating from Circular Vortex Filaments*, with F. Gancedo and F. Mengual. **Annals of PDE**, 11(2):24 (2025), DOI: 10.1007/s40818-025-00211-5; link.
3. *The Cauchy Problem for a Helical Vortex Filament in 3D Navier–Stokes*, with F. Gancedo and A. Hidalgo-Torné. **Advances in Mathematics**, 471:110268 (2025), DOI: 10.1016/j.aim.2025.110268; link.

Invited presentations

- 07/2026 (accepted): *15th AIMS Conference*, Parallel Session SS128: New Trends in Mathematical Fluid Dynamics and Related Problems, Athens, Greece.
- 11/2025: Nonlinear PDE Seminar, *Karlsruhe Institute of Technology*, Karlsruhe, Germany.
- 09/2025: Seminario de Ecuaciones Diferenciales, *University of Granada*, Granada, Spain.
- 06/2025: Poster presentation at *Harmonic Analysis and PDEs Summer School*, Barcelona, Spain (contributed).
- 05/2025: Workshop *Cabo de Gata PDE days*, Almería, Spain.
- 10/2024: Analysis Seminar, *Politecnico di Milano*, Milano, Italy.
- 07/2024: *9th ECM*, Mini-Symposium: Current developments in mathematical fluid dynamics, Sevilla, Spain.
- 12/2023: Oberseminar series, *Max-Planck-Institute for Mathematics in the Sciences,* Leipzig, Germany.
- 11/2023: Seminar on PDEs and Fluid Mechanics, *ICMAT*, Madrid, Spain.
- 12/2022: LMSI talk, *University of Sevilla*, Spain.
- 12/2020: PhD Seminar, *Institute of Mathematics (IMUS)*, University of Sevilla, Spain.

Research stays

02/06/25-12/06/25:	Institute for Advanced Study (IAS), Princeton, USA. Host: Francisco Gancedo.
14/10/24-18/10/24:	Politecnico di Milano, Milan, Italy. Host: Filippo Gazzola.
04/02/24-22/03/24:	Max Planck Institute for Mathematics in the Sciences (MPI-MiS), Leipzig, Germany. Host: László Székelyhidi.
13/02/23-30/03/23:	Max Planck Institute for Mathematics in the Sciecnes (MPI-MiS), Leipzig, Germany. Host: Jan Burczak.

Organization of conferences and seminars

2026:	Co-organizer of the session *"Fluid Dynamics and PDEs"* RSME Biennial Congress, Alicante, Spain.
2025:	Member of Scientific Committee of the conference *"7th Bringing Young Mathematicians Together (BYMAT)"* Sevilla, Spain.
2025:	Co-organizer of the session *"Ecuaciones en Derivadas Parciales IV: Dinámica de Fluidos y Áreas Relacionadas"* RSME 7th Congress of Young Researchers, Bilbao, Spain.
2022:	Co-organizer of the workshop *"Fluid-Fair"* Instituto de Matemáticas de la Universidad de Sevilla (IMUS)
2021-2022:	Co-organizer of the PhD Seminar Instituto de Matemáticas de la Universidad de Sevilla (IMUS)

Teaching

Year 2025-2026:

- Mathematics III (Physics BSc Degree, 2nd year). University of Leipzig, Germany.

Year 2022-2023:

- Mathematics (Chemistry BSc Degree, 1st year), 52 hours. Universidad de Sevilla, Spain.
- Multivariate Differential Calculus (Mathematics BSc Degree, 2nd year), 8 hours. Universidad de Sevilla, Spain.

Year 2021-2022:

- Infinitesimal Calculus (Mathematics BSc Degree, 1st year), 12 hours. Universidad de Sevilla, Spain.
- Functions of Complex Variable (Mathematics BSc Degree, 3rd year), 24 hours. Universidad de Sevilla, Spain.
- Mathematics (Chemistry BSc Degree, 1st year), 24 hours. Universidad de Sevilla, Spain.

Year 2020-21:

- Infinitesimal Calculus (Mathematics BSc Degree, 1st year), 10 hours. Universidad de Sevilla, Spain.
- Multivariate Integral Calculus (Mathematics BSc Degree, 2nd year), 32 hours. Universidad de Sevilla, Spain.
- Mathematical Analysis (Physics BSc Degree, 1st year), 18 hours. Universidad de Sevilla, Spain.

Science popularization

- Member of the organizing committee of the mathematical contest *Concurso de Otoño de Matemáticas (CO+)*, Seville, Spain.
- Monitor at the 8th International Summer School of Mathematics. Seville, Spain. 07/2019.