

Sébastien Gomé

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RESEARCH INTERESTS	Fluid dynamics, turbulence, statistical mechanics, computational physics, geophysical flows	
CURRENT POSITION	Post-doctoral researcher at the Technion - Israel Institute of Technology , (Dept. of Physics), in collaboration with Anna Frishman. Subject: “Mean-wave interactions in rotating turbulence”.	01/2023 – now
EDUCATION	Sorbonne Université , Paris (France) – Ph.D. in Fluid Mechanics at the Laboratory of Physics and Mechanics of Heterogeneous Media (ESPCI Paris): “Transition to turbulence in shear flows”, under the supervision of Prof. Laurette S. Tuckerman & Prof. Dwight Barkley.	2019–2022
	ISAE-Supaero , Toulouse (France). – Master in Engineering: Aerodynamics, simulations and modeling. – MSc in Fluid Dynamics, Energy and Transfers (Université Paul Sabatier)	2018–2019
	Ecole polytechnique , Palaiseau (France). – <i>Diplôme d’Ingénieur</i> (MSc) in Mechanical Engineering. – Research project at EPFL (Switzerland) in 2018: “Impact of wetting conditions on the Faraday instability” (Supervisor: François Gallaire).	2015–2019
	Preparatory class , Lycée Saint-Louis, Paris (France). – BSc: Physics, Mathematics, Chemistry.	2013–2015
TEACHING	Teaching Assistant at Sorbonne Université (Dept. of Mechanics): – <i>Mathematical and numerical methods for mechanics</i> , for 2 nd and 3 rd year Undergraduates; – <i>Fluid Mechanics</i> (including the supervision of experimental projects) for 2nd and 3rd year Undergraduates.	
AWARDS	– Euromech Young Scientist Prize 2025 , received at the 2 nd European Fluid Dynamics Conference for the best oral presentation given by an attendee under the age of 35. – Runner-up in the JFM Emerging Scholar Best Paper Prize 2024 for paper n°5.	
PUBLICATIONS	<ol style="list-style-type: none">1. A. Frishman, S. Gomé & A. Svirsky. “Conservation laws, fluxes, and symmetries: lessons from a perturbative approach for self-organized turbulence”. <i>submitted to the Proceedings of the Royal Society A</i>, 2026.2. S. Gomé & A. Frishman. “Helicity controls the direction of fluxes in rotating turbulence”. <i>submitted to Physical Review Letters</i>, 2026.3. S. Gomé & A. Frishman. “Waves drive the rise and fall of 2D flows in rotating turbulence”. <i>manuscript under revision, Physical Review X</i>, 2024.4. S. Gomé, A. Rivière, L. S. Tuckerman, D. Barkley. “Phase Transition to Turbulence via Moving Fronts”. <i>Physical Review Letters</i>, 2024. (Editor’s suggestion)5. S. Gomé, L. S. Tuckerman, D. Barkley. “Wavelength selection in transitional shear turbulence. Part 1. Spectral analysis”. <i>Journal of Fluid Mechanics</i>, 20236. S. Gomé, L. S. Tuckerman, D. Barkley. “Wavelength selection in transitional shear turbulence Part 2: Emergence and optimal wavelength”. <i>Journal of Fluid Mechanics</i>, 2023. (JFM Emerging Scholar Best Paper Prize – Runner up Honorable Mention)7. S. Gomé, L. S. Tuckerman, D. Barkley. “Extreme events in transitional turbulence”. <i>Philosophical Transactions of the Royal Society</i>, 2022.8. S. Gomé, L. S. Tuckerman, D. Barkley. “Statistical transition to turbulence in plane channel flow”. <i>Physical Review Fluids</i>, 2020. (Editor’s suggestion)	

- SCHOOLS
- CIRM 2025 (Marseille): “Physics and Mathematics of Hydrodynamic and Wave turbulence”
 - Les Houches 2023, “200 years of Navier-Stokes and turbulences”
 - Boulder 2022, “Hydrodynamics across scales”
- CONFERENCES
1. 2nd European Fluid Dynamics Conference (2025, Dublin, Ireland): ”Rotating turbulence: 2D or not 2D?”
 2. 70th Annual Meeting of the Israel Physics Society (2025): ”Rotating turbulence: 2D or not 2D”
 3. 1st European Fluid Dynamics Conference (2024, Aachen, Germany): ”Condensate formation in 3D rotating turbulence”
 4. European Turbulence Conference 2023 (Valencia, Spain): ”Mechanism for turbulent proliferation in planar shear flows”
 5. European Turbulence Conference 2023 (Valencia, Spain): ”Transition to turbulence without large-scale flow”
 6. European Fluid Mechanics Conference 2022 (Athens, Greece): ”Mean flow and patterns in transitional turbulence”
 7. Rencontres du Non-Lineaire 2022 (Paris, France): ”Wavelength selection in transitional shear flows”
 8. APS-DFD 2021 (Phoenix, USA): ”Wavelength selection of turbulent bands in transitional turbulence”
 9. ICTAM 2020+1 (online): ”Decay and splitting pathways in transitional channel flow”
 10. APS - March Meeting 2021 (online): ”Rare events and the transition to turbulence in channel flow” (participant)
 11. APS - DFD 2020 (online): ”Rare events and the transition to turbulence in channel flow”
 12. European Turbulence Conference 2019 (Torino, Italy) . “Transition to turbulence in plane channel flow”.
- INVITED SEMINARS
1. Institut de Physique de Nice, 08/12/2025, “Self-organized turbulence: from shear flows to wave systems”
 2. Ecole polytechnique, 03/2025, ”Rotating turbulence: 2D or not 2D?”
 3. University of Sheffield (UK), 11/23/2022, ”Transition to turbulence in planar shear flows”
 4. University of Leeds (UK), 11/21/2022, ”Transition to turbulence in planar shear flows”
 5. Johns Hopkins University, Baltimore (USA), 11/30/2021, ”Extreme events in transitional shear flows”
 6. École Normale Supérieure, Paris, 11/16/2021, ”Extreme events in transitional shear flows”
 7. Imperial College, London (UK), 06/25/2021, ”Rare events in transitional shear flows”
 8. Simons Foundation (turbulence and statistical physics group) : ”Rare-event algorithm applied to transition to turbulence.”
- REVIEWING **Referee** for the Journal of Fluid Mechanics
- TECHNICAL SKILLS
- *Programming Languages*: C/C++, Fortran, Python, Matlab
- MISCELLANEOUS
- Music: playing the viola for 20 years (Regional Conservatory of Paris)
 - Vice-President of the university orchestra of Ecole Polytechnique and Paris-Saclay University (2016-2017)