Curriculum vitae

Stefano Berti
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Personal details

Born on June 16, 1976 in Rome, Italy.

Present position

13/1/2023	Habilitation à Diriger des Recherches (HDR) in Mechanics, Université de Lille.
since 2012	Associate Professor at Département de Mécanique, École Polytechnique Universitaire (EPU) de Lille, Université de Lille.

University studies

2003-2006	PhD in Physics, Università di Torino (Italy) and Université de Nice - Sophia Antipolis (co-tutoring program). Thesis: "Non-Newtonian turbulence: viscoelastic fluids and binary mixtures".
2003	Master in Physics, Università di Roma "Sapienza" (Italy).

Research experience

2011-2012	Postdoc researcher at Laboratoire de Météorologie Dynamique, ENS, Paris (funding by CNRS, CNES).
2008-2010	Postdoc researcher at Laboratoire Interdisciplinaire de Physique, Université Grenoble Alpes (funding by CNRS).
2007	Postdoc researcher at Helsinki University (funding by TEKES - Finnish Academy for Applied Sciences).

Collective responsibilities

since 2025	Member of the Laboratory Direction Board of UML (Unité de Mécanique de Lille), Lille.
since 2025	Correspondent of UML at the Institute for environmental and social transitions (ITES) of Université de Lille.
since 2023	Correspondent of UML for zero-carbon actions of Université de Lille.

since 2026 Coordinator of international relationships for students in Mechanical engineering (EPU), Université de Lille.

2025-2026 Co-coordinator of 4th and 5th (last) year internships in Mechanical engineering (EPU), Université de Lille.

2016-2025 Co-coordinator of Master 2 internships (Department of Applied Mechanics) and last year internships in Mechanical engineering (EPU), Université de Lille.

2019-2023 Member of the Laboratory Council of UML, Lille.

2016-2024 Organizer of UML seminars, Lille.

2016-2018 Member of the pool of Selection Committees of CNU section 60, Université de Lille.

2015 Member of the evaluation committee of PhD theses, Laboratoire de Mécanique de Lille (LML), Lille.

2009 Organizer of the seminars of DYFCOM group, Laboratoire Interdisciplinaire de Physique, Grenoble.

Grants and participation to funded projects

2024-2027 Participation (co-PI) to CNES project *Data and dynamical synergies for SWOT - B (DIEGOB)*. PI: A. Ponte (Ifremer, Brest).

2024-2025 Participation to CNRS LEFE project *Dynamique côtière dans la zone du panache du fleuve Rouge caractérisée par la télédétection radar et la modélisation haute résolution*. PI: A. Sentchev (Univ. du Littoral Côte d'Opale).

2022-2023 Participation to CNRS LEFE project *Dynamique côtière à sous-mésoéchelle caractérisée par des mesures Lagrangiennes*. PI: A. Sentchev (Univ. du Littoral Côte d'Opale).

2020-2023 Participation (co-PI) to CNES project *Data and dynamical synergies for SWOT (DIEGO)*. PI: A. Ponte (Ifremer, Brest).

2016-2019 Participation to CNES TOSCA project *New dynamical tools for submesoscales characterization in SWOT data*. PI: G. Lapeyre (CNRS, ENS, Paris).

2014-2018 Participation to ANR JCJC project *SEAS (Sea-ice Evolution in Arctic Summer)*. PI: E. Calzavarini and S. Hirata (Univ. Lille).

2013 Projet BQR (Bonus Qualité Recherche) - Emergence, Univ. Lille *Transport and mixing in viscoelastic fluids*.

Organization of scientific meetings

2024 Workshop "Complex fluids and flows", Lille.
Organizer in collaboration with F. Romanò (ENSAM, Lille).

2023 Workshop "Complex fluids, complex flows: solutions for the future", Nantes.
Member of the scientific committee.

2022 Annual meeting of GDR Navier-Stokes 2.00, Lille.
Member of the local organizing committee.

2018 CNRS summer school "Active Transport in the Ocean: Turbulence, Chemistry and Biology", Wimereux.
Organizer in collaboration with F. G. Schmitt (CNRS, Wimereux) and E. Calzavarini (Univ. Lille).

2016 "51ème Congrès annuel du Groupe Français de Rhéologie" (in association with the Belgian Society of Rheology), Lille.
Member of the local organizing committee.

2015 "International Conference on Mechanics of Complex Solids and Fluids", Lille.
Member of the local organizing committee.

Research activity

since 2005 *Reaction-transport systems, applications to population dynamics.*

since 2005 *Turbulence and transport in complex fluids.*

since 2011 *Turbulent transport, Lagrangian dispersion and applications in oceanography.*

Referee for the journals: Physics of Fluids, Journal of Fluid Mechanics, Physical Review Letters, Physical Review Fluids, Physical Review Research, Physical Review E, Journal of Non-Newtonian Fluid Mechanics, Theoretical and Computational Fluid Dynamics, European Physical Journal E, European Physical Journal Plus, Europhysics Letters, Physica D, Journal of the Royal Society Interface, Reports on Progress in Physics, Data in Brief, Water, Journal of Atmospheric and Oceanic Technology, Geophysical & Astrophysical Fluid Dynamics, Journal of Geophysical Research: Oceans, Journal of Physical Oceanography, Geophysical Research Letters, Science Advances, Nature Scientific Reports, Nature Communications, Nature Communications Physics.

Referee for the funding agencies: Agence National de la Recherche ANR (France), Programme National CNRS LEFE (France), American Chemical Society PRF (USA), Dutch Research Council NWO (Netherlands), Programme National de Recherche ARC (Belgium).

Supervision of students

PhD students

2025-2028 A. Dekens, Université de Lille (funding CDSN, ENS). *Project*: Tracer dispersion and clustering in the global ocean and new-generation satellite data. In collaboration with G. Lapeyre (ENS Paris).

2023-2026 L. A. Silva Torres, Université de Lille. *Project*: Lagrangian transport of microplastics in nonhomogeneous upper-ocean turbulent flows. In collaboration with E. Calzavarini (Univ. Lille).

2023-2027 Z. Hou, ENSAM Lille (funding by CSC, China). *Project*: Elastic turbulence in curvilinear geometries. In collaboration with F. Romanò (ENSAM Lille).

2021-2024 M. Maalouly, Université de Lille. *Project*: Lagrangian particle dynamics in ocean submesoscale turbulence and future satellite data. In collaboration with G. Mompean (Univ. Lille).

2018-2021 V. Tergolina, Université de Lille. *Project*: Phytoplankton vertical dynamics in the presence of advection. In collaboration with E. Calzavarini and G. Mompean (Univ. Lille).

2018-2021 A. Jaccod, Sorbonne Université. *Project*: Direct Numerical Simulation of complex multiscale flows. In collaboration with S. Chibbaro (Univ. Paris Saclay).

2015-2019 D. Canossi, Université de Lille (funding by CNPq, Brazil). *Project*: Numerical simulation of the transition to elastic turbulence in viscoelastic inertialess flows. In collaboration with G. Mompean (Univ. Lille).

2015-2018 H. Garg, Université Lille. *Project*: Particle laden inhomogeneous elastic turbulence. In collaboration with E. Calzavarini and G. Mompean (Univ. Lille).

Master students

2024-2025 Y. Bek (M2, ENS, Paris). Collaboration with G. Lapeyre (CNRS, ENS, Paris).

2023-2024 P. Patel (M1, École Centrale, Lille). Collaboration with F. Romanò (ENSAM, Lille).

2022-2023 A. Dekens (M2, ENS, Paris). Collaboration with G. Lapeyre (CNRS, ENS, Paris).

2022-2023 Y. Malem (M2, Univ. Lille). Collaboration with E. Calzavarini (Univ. Lille).

2022-2023 Z. Hou (M2, École Centrale, Lille). Collaboration with F. Romanò (ENSAM, Lille).

2022-2023 G. Carcanade (5th year Centrale Supélec, Paris Saclay). Collaboration with G. Lapeyre (CNRS, ENS, Paris).

2021-2022 Z. Hou (M1, École Centrale, Lille). Collaboration with E. Calzavarini (Univ. Lille) and F. Romanò (ENSAM, Lille).

2020-2021 R. Gandhi (M2, École Centrale, Lyon). Collaboration with E. Calzavarini (Univ. Lille) and F. Romanò (ENSAM, Lille).

2020-2021 E. Chardon Legrand (M1, Univ. Lyon). Collaboration with G. Lapeyre (CNRS, ENS, Paris).

2019-2020 Y. Jiang (M2, École Polytechnique Fédérale de Lausanne, Switzerland). Collaboration with E. Calzavarini (Univ. Lille) and F. G. Schmitt (CNRS, Wimereux).

2018-2019 S. Medlej (M2, École Polytechnique, Paris).

2017-2018 A. Mahdy (M1, École Centrale, Lille).

2013-2014 D. Canossi (4th year EPU, Lille). Collaboration with G. Mompean (Univ. Lille).

2013-2014 K. Allaoua, (M2, Univ. Lille). Collaboration with E. Calzavarini and S. Hirata (Univ. Lille).

Scientific stays

2022 Visiting researcher at MISU, Department of Meteorology - Stockholm, Sweden (invited by I. Koszalka, 19-26/11/2022).

2021-2022 Visiting researcher at the Physics Departement of Turin University, in the framework of a CRCT leave (collaboration with G. Boffetta and S. Musacchio, period: 1/9/2021-30/6/2022).

2018-2021 Invited researcher at Laboratoire de Météorologie Dynamique, ENS, Paris (collaboration with G. Lapeyre, periods: 13/11/2018-12/11/2019, 13/11/2019-12/11/2020, 11/1-10/6/2021).

March 2006 Visiting junior researcher at IFISC (Institute for Cross-Disciplinary Physics and Complex Systems), Palma de Mallorca, in the framework of a MEC-MIUR program of collaboration between Italy and Spain.

Invited talks

- "Lagrangian dispersion in surface ocean turbulence: from quasi-geostrophy to internal waves", De Vinci Research Center, Paris (2025).

- "Lagrangian particle dynamics in weakly ageostrophic surface ocean turbulence", Laboratoire de Mécanique des Fluides et d'Acoustique, Lyon (2024).

- "Relative dispersion at ocean submesoscales from drifter data and idealized turbulence models", MISU, Department of Meteorology - Stockholm, Sweden (2022).

- "Finescale turbulence and mixed-layer dynamics: implications for Lagrangian dispersion", FilaChange - From filaments to climate change, Paris (2022).

- "Lagrangian dispersion in quasi two-dimensional models of ocean submesoscale turbulence", Dipartimento di Fisica, Università di Torino, Italy (2022), Laboratoire Interdisciplinaire de Physique, Grenoble (2022), Laboratoire de Mécanique des Fluides de Lille, Lille (2022).

- "Lagrangian dispersion in upper-ocean turbulent models including mixed-layer instabilities", Lille Turbulence Program - LMFL, Lille (2021), Laboratoire de Météorologie Dynamique, ENS, Paris (2020).

- "Reaction-transport systems in heterogeneous environments and population dynamics", Namur Center for Complex Systems (naXys), Namur, Belgium (2017).

- "Lagrangian reconstructions of temperature and velocity in a model of surface ocean turbulence", Workshop "Inversion of SWOT ocean observations" - CNES, Toulouse (2014).

- "Lagrangian transport: applications to ocean dynamics", Laboratoire d'Océanologie et de Géosciences, Wimereux (2014).

- "Lagrangian reconstructions of tracer fields in numerical simulations of upper ocean turbulence", Istituto di Scienze dell'Atmosfera e del Clima, CNR, Rome, Italy (2012).

- "Reaction-diffusion approach to combustion dynamics in a steady compressible flow", Institut Jean le Rond d'Alembert, Sorbonne Université, Paris (2010).

- "Combustion dynamics in steady compressible flows", Rencontres Niçoises de Mécanique des Fluides - Laboratoire J. A. Dieudonné, Nice (2009).

- "Turbulence in viscoelastic fluids", Laboratoire de Spectrométrie Physique, Grenoble (2007).

- "Phase separation in two-dimensional flows", Departement of Mathematics, Helsinki University, Finland (2006).

- "Small scale statistics in viscoelastic turbulent flows", IFISC, Palma de Mallorca, Spain (2006).

Other seminars

- "Seasonality of the transport and aggregation properties of ocean submesoscale turbulent flows", 18th International Heat Transfer Conference, Rio de Janeiro, Brazil (2026).

- "Nonhomogeneous elastic turbulence in two-dimensional confined geometry", Workshop "Complex Flows and Complex Fluids" - Satellite SatPhys29, Rome, Italy (2025).

- "Relative dispersion at the surface of the ocean: role of balanced motions and internal waves", EGU General Assembly - Nonlinear Processes in Geophysics, Vienna, Austria (2025).

- "Predictability of Lagrangian transport properties in a model of ageostrophic surface ocean turbulence", 1st European Fluid Dynamics Conference, Aachen, Germany (2024).

- "Surface light modulation by sea ice and phytoplankton survival in a convective flow model", Euromech colloquium - Complex particles in turbulent flow, Nice (2023).

- "Light-limited dynamics of sinking phytoplankton in a convective flow model with ice-covered waters", EGU General Assembly - Nonlinear Processes in Geophysics, Vienna, Austria (2023).

- "Phytoplankton-zooplankton dynamics in 3D turbulent flows behind an idealized island", vEGU General Assembly - Nonlinear Processes in Geophysics (2022).

- "Lagrangian pair dispersion in upper-ocean turbulent flows with mixed-layer instabilities", vEGU General Assembly - Nonlinear Processes in Geophysics (2021).

- "Lagrangian pair dispersion in generalized two-dimensional turbulence", 17th European Turbulence Conference, Turin, Italy (2019).

- "Relative dispersion in quasi-geostrophic models of upper-ocean turbulence", 7th Lagrangian Analysis and Prediction of Coastal and Ocean Dynamics meeting, Venice, Italy (2019).
  4th Xiamen Symposium on Marine Environmental Sciences, Xiamen, China (2019).

- "Relative dispersion in direct cascades of generalized two-dimensional turbulence", Euromech/Ercoftac colloquium – Turbulent cascades II, Lyon (2017).

- "Effects of discreteness on population persistence in an oasis", Fluid active matter symposium, ICTAM 24, Montreal, Canada (2016).

- "Lagrangian reconstructions of temperature and velocity in surface ocean turbulence", IUGG General Assembly - Physical Oceanology (Sub-Mesoscale Eddies), Prague, Czech Republic (2015).

- "Relative dispersion and turbulence in the Southwestern Atlantic Ocean from drifters data", 8th Chaotic Modeling and Simulation International Conference, Paris (2015).

- "Lagrangian reconstructions of surface ocean turbulence", 14th European Turbulence Conference, Lyon (2013).

- "Lagrangian reconstructions of tracer fields at ocean surface", EGU General Assembly - Nonlinear Processes in Geophysics, Vienna, Austria (2012).

- "Finite-scale dispersion in the southwestern Atlantic Ocean: analysis of Lagrangian drifters data", 18th Conference on Atmospheric and Oceanic Fluid Dynamics, Spokane, USA (2011).

- "Phenomenology of elastic turbulence in 2D polymer solutions",
  Softflow summer school on "Complex and biofluids", Cargese (2009).

- "Combustion dynamics in steady compressible flows",
  PPF DYSCO "Dynamique des Systèmes Complexes", Annecy (2009).

- "Phenomenology of elastic turbulence in two-dimensional polymer solutions",
  Rencontre sur la Microfluidique et Fluides Complexes, Marrakech, Morocco (2008).

- "Elastic turbulence in 2D viscoelastic flows",
  11$^{\text{th}}$ European Turbulence Conference, FEUP, Porto, Portugal (2007).

Teaching activity

since 2012 — Université de Lille (MCF)
Mechanics Department, EPU:
3rd year: Informatics (lab work), Numerical methods for engineers (course, exercise classes and lab work), Mathematical tools for engineers (exercise classes); Fluid mechanics (course and exercise classes); 4th year: Thermodynamics (course and exercise classes); 5th year: Mechanics of viscous fluids and turbulence (course and exercise classes).
Bachelor in Mechanics: Lagrangian and Hamiltonian mechanics (course and exercise classes), Applied mechanics (course and exercise classes), Applied fluid mechanics (course and exercise classes), Continuum mechanics (fluids) (exercise classes), Thermodynamics (exercise classes).
Bachelor in Applied Mechanics, Hohai-Lille College, Jintan (China), 2nd year: Heat transfer and thermodynamics (course).
Master 1 in Mechanics: Constitutive laws (fluid mechanics) (exercise classes).
Master 2 in Mechanics: Complex fluids (course), Thermal transfers (course), Turbulence (course).
Master 1 in Applied Mechanics: Heat transfer (course), Advanced heat transfer (numerical lab work).
Monitoring of assistant-engineer internships (mechanics) (4th year EPU), mechanical engineering final-project internships (5th year EPU), Master 2 internships in applied mechanics; 2 internships of each type per year on average.
Monitoring of professional training contracts in mechanical engineering (5th year EPU).

2009 — Université Grenoble Alpes (temporary lecturer)
Bachelor, Department of Electricity and Industrial Informatics of Institut Universitaire de Technologie (IUT 1): Electricity and magnetism (course and exercise classes).

Science popularization activity

2026 — Fête de la science, exhibition "Saveurs savants", 1894 - Institut Pasteur, Lille. Stand on *Fluid mechanics in the kitchen: density and viscosity effects.* Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2024 — Fête de la science, exhibition "Océan de savoirs", 1894 - Institut Pasteur, Lille. Stand on *Oceanic fluid flows: waves, vortices, turbulence.* Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2023 — Fête de la science, exhibition "Sport & science", Natural history museum, Lille. Stand on *Forces on obstacles in fluid flows.* Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2020 Fête de la science, exhibition "Planète Nature", High school Cousteau, Wasquehal (Lille). Stand on *Transport of plastics in the ocean*. Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2019 Fête de la science, exhibition "A demain", Lille. Stand on *Flowing properties of granular materials and active matter*. Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2018 Fête de la science, exhibition "L'erreur", Lille. Stand on *Basic mechanisms at the origin of tides*. Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2018 Seminar for high-school students on *Turbulence*, Departments of Mathematics and of Mechanics, Université de Lille.

2017 Fête de la science, exhibition "Voyage(s)", Lille. Stand on *Fluid turbulence*. Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2016 & 2017 Seminar for high-school students on *Chaos and complexity in fluid dynamics*, Departments of Mathematics and of Mechanics, Université de Lille.

2016 Fête de la science, exhibition "Cycle(s) de vie", Lille. Stand on *Swimming microorganisms*. Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2015-2016 Project on initiation to research (TIPE) for French high-school students. Lycée Mariette, Boulogne sur Mer et Univ. Lille. *Student*: A. Ohier. *Title*: Numerical weather forecasting. Research partner.

2015 Fête de la science, exhibition "Climat(s)", Lille. Stand on *Fluid mechanical aspects of the climatic system*. Coordinator in collaboration with E. Calzavarini (Univ. Lille).

2008 & 2009 Fête de la science, exhibition "Fluides complexes: liquides ou solides", Grenoble. Scientific animator.

2006 Exhibition "Semplice e Complesso" organized by Istituto Nazionale di Fisica della Materia (INFM), Turin. Scientific animator.

Articles

31. L. A. Silva Torres, E. Calzavarini, S. Berti - "Vertical transport and confinement of weakly buoyant particles in a convective ocean mixed-layer model", *Physical Review Fluids* (submitted, 2026).

30. Z. Hou, S. Berti, T. Burghelea, F. Romanò - "Nonhomogeneous elastic turbulence in the two-dimensional Taylor-Couette flow", *Physical Review Fluids* **11**, 113303 (2026).

29. M. Maalouly, A. Dekens, G. Lapeyre, A. Ponte, S. Berti - "Lagrangian pair dispersion in the presence of high-frequency motions at the ocean surface", *Journal of Physical Oceanography* **56**, 1741 (2026).

28. A. Sentchev, T. Duc Nguyen, S. Berti, N. Ayoub, V. Duy Vu - "Lagrangian dispersion in the Red River plume region, northeast Vietnam, from drifter observations and modeling", *Journal of Marine Systems* **252**, 104143 (2025).

27. M. Maalouly, G. Lapeyre, S. Berti - "Impact of ageostrophic dynamics on the predictability of Lagrangian trajectories in surface-ocean turbulence", *Physical Review Fluids* **9**, 104503 (2024).

26. M. Maalouly, G. Lapeyre, B. Cozian, G. Mompean, S. Berti - "Particle dispersion and clustering in surface ocean turbulence with ageostrophic dynamics", *Physics of Fluids* **35**, 126601 (2023).

25. S. Berti, G. Boffetta, S. Musacchio - "Mean flow and fluctuations in the three-dimensional turbulent cellular flow", *Physical Review Fluids* **8**, 054601 (2023).

24. V. B. Tergolina, E. Calzavarini, G. Mompean, S. Berti - "Surface light modulation by sea ice and phytoplankton survival in a convective flow model", *European Physical Journal Plus* **137**, 1387 (2022).

23. C. Manh Tran, A. Sentchev, S. Berti, N. Ayoub, T. Nguyen-Duy, C. K. Nguyen - "Assessment of relative dispersion in the Gulf of Tonkin using numerical modeling and HF radar observations of surface currents", *Continental Shelf Research* **245**, 104784 (2022).

22. A. Jaccod, S. Berti, E. Calzavarini, S. Chibbaro - "Three-dimensional turbulence effects on plankton dynamics behind an obstacle", *European Physical Journal Plus* **137**, 184 (2022).

21. V. B. Tergolina, E. Calzavarini, G. Mompean, S. Berti - "Effects of large-scale advection and small-scale turbulent diffusion on vertical phytoplankton dynamics", *Physical Review E* **104**, 065106 (2021).

20. A. Jaccod, S. Berti, E. Calzavarini, S. Chibbaro - "Predator-prey plankton dynamics in turbulent flow past an obstacle", *Physical Review Fluids* **6**, 103802 (2021).

19. H. Garg, E. Calzavarini, S. Berti - "Statistical properties of two-dimensional elastic turbulence", *Physical Review E* **104**, 035103 (2021).

18. S. Berti, G. Lapeyre - "Lagrangian pair dispersion in upper-ocean turbulence in the presence of mixed-layer instabilities", *Physics of Fluids* **33**, 036603 (2021).

17. D. O. Canossi, G. Mompean, S. Berti - "Elastic turbulence in two-dimensional cross-slot viscoelastic flows", *Europhysics Letters*, **129**, 24002 (2020).

16. D. Vergni, S. Berti, A. Vulpiani, M. Cencini - "Reaction fronts in persistent random walks with demographic stochasticity", *Physical Review E* **99**, 012404 (2019).

15. H. Garg, E. Calzavarini, G. Mompean, S. Berti - "Particle-laden two-dimensional elastic turbulence", *European Physical Journal E* **41**, 115 (2018).

14. B. Rabbanipour Esfahani, S. Hirata, S. Berti, E. Calzavarini - "Basal melting driven by turbulent thermal convection", *Physical Review Fluids* **3**, 053501 (2018).

13. A. Foussard, S. Berti, X. Perrot, G. Lapeyre - "Relative dispersion in generalized two-dimensional turbulence", *Journal of Fluid Mechanics* **821**, 358 (2017).

12. S. Berti, M. Cencini, D. Vergni, A. Vulpiani - "Extinction dynamics of a discrete population in an oasis", *Physical Review E* **92**, 012722 (2015).

11. S. Berti, G. Lapeyre - "Lagrangian reconstructions of temperature and velocity in a model of surface ocean turbulence", *Ocean Modelling* **76**, 59 (2014).

10. D. Vergni, S. Iannaccone, S. Berti, M. Cencini - "Invasions in heterogeneous habitats in the presence of advection", *Journal of Theoretical Biology* **301**, 141 (2012).

9. S. Berti, F. dos Santos, G. Lacorata, A. Vulpiani - "Lagrangian drifter dispersion in the southwestern Atlantic Ocean", *Journal of Physical Oceanography* **41**, 1659 (2011).

8. M. Garcia, S. Berti, P. Peyla, S. Rafaï - "Random walk of a swimmer in a low-Reynolds-number medium", *Physical Review E* **83**, 035301(R) (2011).

7. S. Berti, G. Boffetta - "Elastic waves and transition to elastic turbulence in a two-dimensional viscoelastic Kolmogorov flow", *Physical Review E* **82**, 036314 (2010).

6. S. Berti, D. Vergni, A. Vulpiani - "Combustion dynamics in steady compressible flows", *Europhysics Letters* **83**, 54003 (2008).

5. S. Berti, A. Bistagnino, G. Boffetta, A. Celani, S. Musacchio - "Two-dimensional elastic turbulence", *Physical Review E* **77**, 055306(R) (2008).

4. S. Berti, C. López, D. Vergni, A. Vulpiani - "Discreteness effects in a reacting system of particles with finite interaction radius", *Physical Review E* **76**, 031139 (2007).

3. S. Berti, A. Bistagnino, G. Boffetta, A. Celani, S. Musacchio - "Small-scale statistics of viscoelastic turbulence", *Europhysics Letters* **76**, 63 (2006).

2. S. Berti, G. Boffetta, M. Cencini, A. Vulpiani - "Turbulence and coarsening in active and passive binary mixtures", *Physical Review Letters* **95**, 224501 (2005).

1. S. Berti, D. Vergni, F. Visconti, A. Vulpiani - "Mixing and reaction efficiency in closed domains", *Physical Review E* **72**, 036302 (2005).

Book chapters and conference proceedings

5. S. Berti, Y. Bek, A. Dekens, G. Lapeyre - "Seasonality of the transport and aggregation properties of ocean submesoscale turbulent flows" in *International Heat Transfer Conference Digital Library*, Begell (Rio de Janeiro, Brazil, 2026) (accepted).

4. F. G. Schmitt, Y. Jiang, E. Lecuyer, M. Crouvoisier, S. Berti, E. Calzavarini, V. Tergolina, E. Mayette - "Stratification des eaux marines au large de Boulogne-sur-mer" in *Observer le monde marin, de la ressource à l'assiette*, eds. F. G. Schmitt, A. Brisabois, Éditions Universitaires Européennes (2024) (in French).

3. A. Foussard, S. Berti, X. Perrot, G. Lapeyre - "Relative dispersion in direct cascades of generalized two-dimensional turbulence" in *Turbulent cascades II*, eds. M. Gorokhovski, F. S. Godeferd, Springer (Lyon, France, 2019).

2. S. Berti, F. dos Santos - "Relative dispersion and turbulence in the Southwestern Atlantic Ocean from drifters data", Chaotic Modeling and Simulation (CMSIM) **1**, 9 (2016).

1. S. Berti, A. Bistagnino, G. Boffetta, A. Celani, S. Musacchio - "Elastic turbulence in 2D viscoelastic flows" in *Advances in Turbulence XI*, eds. J. M. L. M. Palma, A. Silva Lopes, Springer (Porto, Portugal, 2007).