

Current position

Research Director (DR2) at CNRS, Laboratoire de Physique – UMR 5672, Lyon (France)

Keywords **Research** : Turbulence, Transport phenomena, Extreme events, Multi-phase flows, Fluid-structure interactions, aerodynamics, granular media, MHD

Teaching : Fluid mechanics, Turbulence & Mixing, Lagrangian methods, Image processing

Education

2012 **Habilitation**, Turbulent Transport of Particles and Fields, Université de Grenoble (France)

2003 **Ph.D.**, *Physics*, École Normale Supérieure de Lyon (France), *Supervisors* : Dr. J.-F. Pinton & Dr. Ph. Odier

1999 **Agrégation**, *Physics*

1996-2000 **B.Sc.-M.Sc.**, *Physics*, École Normales Supérieure de Lyon, (France)

Awards and honours

2022 **ONERA Prize of the French Academy of Science**

2013-present **Plenary and semi-plenary speaker in major international conferences**
ETC11 Warsaw (Poland, 2013), ICMF Florence (Italy, 2016), CFM Lille (France, 2017), APS-DFD Seattle (USA, 2019)

2009 **Euromech Young Scientist Prize, for research in “Turbulent transport of particles”**

2000-2003 **CNRS PhD Fellowship**

Research experience

2014-present **Research Director**, DR2, LEGI (2014-2015) & Laboratoire de Physique (since 2016), (France)

2004–2014 **Researcher**, CR2-CR1, LEGI (UMR 5119) - CNRS / Université de Grenoble, Grenoble (France)

2003–2004 **Postdoctoral Fellow**, LASSP - Cornell University, Ithaca (U.S.A.)

Teaching experience

2022-present **Head of the M2 Program Physics, Concepts and Applications at ENS de Lyon**, (~ 60h/yr)

2015-present **Ecole Centrale de Lille**, *Lectures* (~20h/yr), M1 International of Turbulence

2016-2022 **Ecole Normale Supérieure de Lyon**, *Lectures in M2* (~ 16h/yr), *lab class in L3* (~ 32h/yr)

2007-2013 **Université Grenoble Alpes**, *Lectures and lab class*, (~40h/yr), L2, M1, M2, IUT

Scientific production

Articles **104**, including 3 invited articles, 3 reviews

Proceedings **26**, and 6 book chapters

conferences **46 invited conferences & lectures**, including 4 plenary/semi-plenary sessions at ETC13, ICMF2016, CFM2017, APS-DFD 2019 72nd Annual Meeting, **40 oral presentations**, **27 seminars**

Research Management

Advising and supervising activities

2004–present **16 PhDs**, 3 in progress, 6 international students, 1 international co-tutelle

2004–present **11 Postdocs**, 4 international

2004–present **50 internships**, L3, M1, M2, Engineering schools, 20 international students

Collaborations & Research contracts

National & Regional **26 contracts**, 1 R^2 (co-PI), 1 IDEX Lyon (PI), 9 ANR (1 as PI, 3 as local PI), 4 Labex, 1 IDRIS, 1 PPF (local PI), 1 AGIR (PI), 1 Région Rhône-Alpes, 1 CNES (PI), 1 IMPT (PI), 1 “Tremplin” CNRS (PI), 2 “Emergence” ENS de Lyon” (PI), 2 FRAMA (1 as PI)

International **11 contracts**, 1 European I^3 project (PI of work-package with 4 european teams), 1 European project within ESWIRP Program (PI of the project with 14 european teams, 1 France-Brésil FAPESP-UdL (PI), 3 France-Germany PHC-Procope (1 as PI), 1 France-Rép. Tchèque PHC-Barande, 2 France-Argentina ECOS-SUD (1 as PI), 1 IRP France-Argentina, 1 IRL France-Argentina

Industrial **3 contracts**, 2 with PSA-Peugeot-Citroen (PI), 1 with IFPEN (co-PI)

Direction activities

- 2022–present **Director of the M2 Master program “Physics, Concepts and Applications”, ENS de Lyon**
- 2021–present **Director of GDR “Navier Stokes 2.00”, CNRS - GDR 2097**
- 2019–2022 **Deputy director of doctoral school of Lyon for “Physics and Astrophysics” – ED52 PHAST, Univ. of Lyon**
- 2019–2020 **Director of GDR “Phenomenology of Turbulence”, CNRS - GDR 2865**
- 2017–2019 **Deputy director of GDR “Phenomenology of Turbulence”, CNRS - GDR 2865**

Stirring activities

- 2023–present **Member of the scientific board of experts from INSIS for the CNRS Prospective**
- 2023–present **Member of the Euromech European Turbulence Conference Committee (ETCC)**
- 2023–present **Member of the nominating committee of APS - DFD division**
- 2021–present **Member of the General Assembly of CNFM, under the aegis of the French Academy of Science**
- 2021–present **Member of the stirring committee of the “Non-Linear Physics Division” of the SFP**
- 2018–present **Member of the Scientific Board of “Musée des Confluences”, (1st French National Museum outside Paris)**
- 2019–2024 **Member of the Animation Committee of the Labex “iMUST” for the axis “Continuous Media and Fluids”**
- 2018–2019 **Member of the Stirring Committee of the Labex “iMUST”**
- 2014–2015 **Leader of the team EDT, LEGI (UMR 5119) - Université Grenoble Alpes / CNRS, Grenoble (France)**
- 2013–2017 **Leader of the “Particles & Fields” axis of EuHIT project, FP7 - I³ European project for Turbulence research**
- 2013–2017 **Member of the stirring committee of GDR “Turbulence”, CNRS - GDR 2865**

Expertise and evaluation activities

- PhD Jurys **Member of 40, 22 as reviewer, 9 as president, 10 international**
- HDR Jurys **Member of 4, all as reviewer**
- Recruiting **Member of 7 selection committees, 2 Associate Professors, 4 Assistant Professors, 1 CEA**
- Expert **for several research agencies, ANR, Icelandic Research Fund, NWO (Netherlands), FONCyT (Argentina), National Science Centre of Poland, ISF (Israel)**
- Reviewer **for numerous international journals, JFM, PoF, NJP, IJMF, PRE, PRL, JoT, PlosOne, etc., ~20 rev/year**
- Guest Editor for NJP, Special focus on Particles in Turbulence (2014)**

Organization of scientific events

- Conferences **ETC14 (2013, 650 part.), DTPF (2021, 110 part.), Crossed Pathways in Turbulence (2019, 100 part.), Out-of-Equilibrium Phenomena (2018, 80 part.), SFP D. Dautreppe conference (2008, 50 part.)**
- Workshops **Turbulent Cascades 2 Euromech-Ercoftac workshop (2017, 70 part.), Turbulences & Interfaces Euromech-Ercoftac Workshop (2022, 40 part.)**
- Schools **6 editions of NCTR winter school (founded in 2010, then 2012, 2014, 2017, 2019, 2021, 70 part.), 200 years of Navier-Stokes and Turbulences 4 week Les Houches Summer schools (2023, 60 part.)**
- Other **3 Meetings of GDR “Turbulence Phénoménologie” (2015, 2019, 2020, 80 part.)**

Outreach activities

- 2023 **Short TV interview at the occasion of the bicentenary of Navier-Stokes equations, France 3, August 2023**
- 2023 **Outreach article on Fluid Mechanics Research, The Conversation, June 2023**
- 2023 **Outreach Conference on Transport of Particles and Pollutants, 50 years of LEMTA, Nancy, March 2023**
- 2020–present **Youtube channel “Turbulence”, <https://www.youtube.com/channel/UCZye110eZH7os9ZYFWXSB1Q>**
- 2018–present **“Variations Physiques” art-science project, with the artist Alex Andrix (www.variationsphysiques.fr) presented in numerous art festivals, scientific events and broad audience events.**
- 2021 **2 Press releases from CNRS and ENS de Lyon, on Magnetic Janssen effect and Rare events statistics of penulum in the wind results.**
- 2021 **Article in “Pour la Science” Magazine, on Rare events statistics of pendulum in the wind.**
- 2020 **Press release from CNRS, on Active Turbulence results.**
- 2013–2014 **Press release, articles in the press and presentations in scholar institutions, on the ESWIRP Turbulence experiments carried in the S1MA - Onera Modane windtunnel.**
- 2007 **Press releases and articles in the press and broad audience websites, on the VKS dynamo experiment.**
- Other **Frequent participation to the outreach event “Fête de la Science”, Frequent discussions and scientific assistance for educational projects (TIPE) with high school, “classes préparatoires” and undergraduate students.**