Francesco Romanò

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GitHub	`github.com/fromano88`
Nationality	Italian
Date of birth	December 15th, 1988
Marital status	Married, no children

1 Research Activity

1.1 Career

Period	October 2023 – present
Position	*Guest Professor,* Fluid Mechanics
Affiliation	National Research Center of Pumps, Jiangsu University, Zhenjiang, Jiangsu (China)

Period	September 2019 – present
Position	*Associate Professor,* Fluid Mechanics and Energetics
Affiliation	Lille Fluid Mechanics Laboratory, Arts et Métiers, Lille (France)

Period	April 2018 – August 2019
Position	*Post-Doctoral Fellow,* Biomedical Engineering
Affiliation	Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI (USA)

Period	October 2016 – March 2018
Position	*Post-Doctoral Fellow,* Mechanical Engineering
Affiliation	Institute of Fluid Mechanics and Heat Transfer, TU Wien, Vienna (Austria)

Period	October 2012 – September 2016
Position	*PhD Student,* Mechanical Engineering
Affiliation	Institute of Fluid Mechanics and Heat Transfer, TU Wien, Vienna (Austria)

1.2 Education

Period	October 2012 – September 2016
Degree	*PhD,* Mechanical Engineering, full marks and distinction
Defended on	September 27th, 2016
Ph.D. Committee	Michael Krommer (TU Wien, Austria), committee chair Hendrik C. Kuhlmann (TU Wien, Austria), examiner Cristian Marchioli (University of Udine, Italy), examiner and reviewer Eckart Meiburg (UC Santa Barbara, USA), reviewer
Thesis Title	*Particle accumulation structures in boundary-driven flows*
Supervisor	Hendrik C. Kuhlmann
Affiliation	Institute of Fluid Mechanics and Heat Transfer, TU Wien, Vienna (Austria)

Period	October 2010 – July 2012
Degree	*MSc,* Aerospace Engineering, full marks and highest honors
Defended on	July 10th, 2012
Thesis Title	*Analysis of some streaks generation method in a Blasius boundary layer*
Supervisor	Simone Camarri
Affiliation	Department of Aerospace Engineering, University of Pisa, Pisa (Italy)

Period	September 2007 – October 2010
Degree	*BSc,* Aerospace Engineering, full marks
Defended on	October 12th, 2010
Thesis Title	*Transient of Poiseuille flow simulation using FreeFEM++*
Supervisor	Maria Vittoria Salvetti
Affiliation	Department of Aerospace Engineering, University of Pisa, Pisa (Italy)

1.3 Projects

The following acronyms are used for funding agencies:

ANR	Agence Nationale de la Recherche, France (National Agency for Research)
CIFRE	Conventions Industrielles de Formation par la Recherche, France (Industrial Training Agreements through Research)
CNES	Centre National d'Études Spatiales, France (National Centre for Space Studies)
CSC	Chinese Research Council, China
ESA	European Space Agency, Europe
FFG	Förderagentur für die unternehmensnahe Forschung und Entwicklung, Austria (The Austrian Research Promotion Agency)
FWF	Österreichischer Wissenschaftsfonds, Austria (Austrian Science Fund)
GENCI	Grand Équipement National de Calcul Intensif, France (High Performance Computing National Facility)
NIH	National Institutes of Health, United States
TUBITAK	Türkiye Bilimsel ve Teknolojik araştırma Kurumunun, Türkiye (Scientific and Technological Research Council of Türkiye)

Project	Multiphase flow through converging nozzles
Role	Participant
Grant No.	FFG Innovation Check #847669 (≈ 10k€)

Project	Steam sterilisation
Role	Scientific Co-Coordinator
Grant No.	FFG Project #851030 (1 PhD student ≈ 160k€)
Project	Dynamics of suspended particles in periodic vortex flows
Role	Participant
Grant No.	ESA-SciSpace #AO-2000-091

Project	Thermocapillary oscillatory motion and interfacial heat exchange (JEREMI)
Role	Participant
Grant No.	ESA-SciSpace #AO-2004-097

Project	Modelling Support to ESA-JAXA JEREMI project on ISS
Role	Participant
Grant No.	ESA-SciSpace #PO-4000121111 (1 PostDoc ≈ 250k€)

Project	Microfluidic tissue engineering of small airway injuries
Role	Participant
Grant No.	NIH research Grant #1R01HL136141-01 (1 PostDoc ≈ 200k$)

Project	Stability Analysis for the JEREMI Experiment
Role	Participant
Grant No.	FFG Project "SAJE", #866027 (1 PhD student ≈ 270k€)

Project	Intricate bodies in the boundary layer – bridging fluid mechanics, morphology and ecology in larval Drusinae (Insecta: Trichoptera)
Role	Contributor to the project proposal
Grant No.	FWF Project #P30048-B29 (1 PhD student + 1 PostDoc ≈ 370k€)

Project	Modelization of the turbulence
Role	Scientific Co-Coordinator
Grant No.	GENCI Project #A0062A01741 (0.5M CPU hours)

Project	Stability analysis in a centrifugal pump
Role	Scientific Co-Leader
Grant No.	CSC-ParisTech 2018 (1 PhD student ≈ 140k€)

Project Modelization of the turbulence
Role Scientific Co-Coordinator
Grant No. GENCI Project #A0062A01741 (1.5M CPU hours)

Project Horizon2020: Design and control of an axial compressor
Role Participant
Grant No. CleanSky: ACONIT ($\approx$ 1.6M€)

Project Numerical study of a cavitating bubble near a wall
Role Scientific Co-Leader
Grant No. CSC-ParisTech 2019 (1 PhD student $\approx$ 140k€)

Project Airway closure in human lungs
Role Participant
Grant No. TUBITAK #119M513 (1 PhD student $\approx$ 70k€)

Project Design of a pintle injector
Role Scientific Co-Leader
Grant No. CNES: PERSEUS

Project Design and simulation of an two-phase pipeline with a pump-turbine
Role Scientific Co-Leader
Grant No. SuperGrid/General Electric (1 PostDoc $\approx$ 200k€)

Project Modelization of turbulence
Role Scientific Co-Coordinator
Grant No. GENCI Project #A0062A01741 (5M CPU hours)

Project Numerical and experimental study of liquid plugs in human lungs
Role Scientific Co-Leader
Grant No. CSC-ParisTech 2020 (1 PhD student $\approx$ 140k€)

Project PINN for the physics of complex flows
Role Scientific Co-Leader
Grant No. ENSAM AAP PhD Theses 2021 (1 PhD student $\approx$ 110k€)

Project Multi-scale matching for flows with a grid
Role Scientific Leader
Grant No. ANR-JCJC 2021 (1 PhD student + 1 PostDoc $\approx$ 220k€)

Project Numerical study of multiple cavitating bubbles near a wall
Role Scientific Co-Leader
Grant No. CSC-ParisTech 2022 (1 PhD student $\approx$ 140k€)

Project Modelization of turbulence
Role Scientific Co-Coordinator
Grant No. GENCI Project #A0062A01741 (6M CPU hours)

Project Life-cycle design and systemic approach for heating storage energy efficiency
Role Participant
Grant No. ANR-Chaire Industrielle (1 PostDoc $\approx$ 80k€)

Project Elastic turbulence in curvilinear geometries
Role Scientific Co-Leader
Grant No. CSC-ParisTech 2023 (1 PhD student $\approx$ 140k€)

Project Modeling of stall in axial compressors
Role Scientific Co-Leader
Grant No. CIFRE-Safran (1 PhD student $\approx$ 200k€)

Project	Modelization of the turbulence
Role	Scientific Co-Coordinator
Grant No.	GENCI Project #A0162A01741 (6M CPU hours)

1.4 Awards and Grants

Awards	Medal for graduation with honors, University of Pisa, 2012 Honorary Franklin Membership, Member #YG60806, 2018 Qualification as Maître de Conférences #19260330790, 2019 Featured Paper on *Chaos* **30**, 2020 Honorary Rosalind Member of London Journals Press, Member #WQ06394, 2020 Cover Page, *Int. J. Turbomach. Propuls. Power*, **6**(4), 2022 Guest Professorship, Jiangsu University, October 2023 – present
Grants	PostDoc Fellowship, Mech. Eng., TU Wien, Vienna, Austria, 2016–2018 Sponsorship for Computational Resources: cluster VSC at TU Wien, 2018–2022 PostDoc Fellowship, Biomedic. Eng., U-M, Ann Arbor, USA, 2018–2019 Sponsorship for Computational Resources: cluster Flux at U-M, 2019–2022 FFG Funding for 1 PhD Thesis, 2016 CSC Funding for 1 PhD Thesis, 2019 GENCI Computational Resources: cluster Jean-Zay/SKL/Rome, 2019 to present CSC Funding for 1 PhD Thesis, 2020 SuperGrid/General Electric Funding for 1 PostDoc, 2020 CSC Funding for 1 PhD Thesis, 2021 ENSAM Funding for 1 PhD Thesis, 2021 ANR Funding for 1 M.Sc. Thesis, 1 PhD Thesis and 1 PostDoc, 2021 CSC Funding for 1 PhD Thesis, 2022 Collaboration: 1 PostDoc, ANR Chaire Industrielle "CORENSTOCK", 2023 CSC Funding for 1 PhD Thesis, 2023 Safran Funding for 1 PhD Thesis, 2023

1.5 Organizing, Editing and Reviewing Activity

Conferences	Organizing Committee, International Marangoni Association (IMA7), Vienna, 2014 Organizing Committee, European Fluid Mechanics Conference (EFMC12), Vienna, 2018 Scientific Committee, Conference on Modelling Fluid Flow (CMFF'18), Budapest, 2018 Chairman of the Session "Control and drag reduction 4", EFMC12, Vienna, 2018 Reviewer, Conference on Modelling Fluid Flow (CMFF'18), Budapest, 2018 Reviewer, International Conference on Multiphase Flow (ICMF2019), Rio de Janeiro, 2019 Reviewer, Conference of Mechanical, Electric and Industrial Eng. (MEIE 2019), China, 2018 Reviewer, International Conference on Physics, Mathematics and Statistics (ICPMS2019), China, 2019 Reviewer, European Conference on Turbomachinery (ECT14), Gdansk, 2021 Scientific Committee, Conference on Modelling Fluid Flow (CMFF'22), Budapest, 2022 Scientific Committee, Journées Scientifiques, Fluides et écoulements complexes, Nantes, 2023
Seminars	Organizer of Scientific Seminars at Laboratoire de Mécanique des Fluides de Lille, 2019–present Organizer of the Multimedia Footage, LMFL Fluid Mechanics Webinars, `YouTube`, 2020–present Responsible Arts et Métiers of the topic "Santé" (Health) for the Laboratoire de Mécanique des Fluides de Lille, 2024–present
Reviewer ($\approx$ 70 papers)	ACS Omega Acta Mechanica Applied Mathematics and Computation ASME Journal of Verification, Validation and Uncertainty Quantification Chemical Engineering Science Chaos: An Interdisciplinary Journal of Nonlinear Science Coatings

	Dynamics of Atmospheres and Oceans
	Energies
	European Journal of Mechanics / B Fluids
	Frontiers in Space Technologies, Microgravity
	International Journal of Heat and Mass Transfer
	International Journal of Multiphase Flow
	International Journal of Non-Linear Mechanics
	International Journal of Thermal Science
	International Journal of Turbomachinery, Propulsion and Power
	Journal of Applied Mathematics and Computational Mechanics
	Journal of Engineering and Technological Sciences
	Journal of Fluid Mechanics
	Journal of Scientific Computing
	Langmuir
	Mathematics and Computers in Simulation
	Meccanica
	Microgravity Science and Technolology
	Philosophical Transactions of the Royal Society A
	Physics of Fluids
	Science Progress
	Scientific Reports
	Springer Nature Applied Science
	Symmetry
	Theoretical and Computational Fluid Dynamics
	The European Physical Journal Plus
	Waves in Random and Complex Media
	World Journal of Mechanics
Editor	Reviewer Editor for Frontiers in Space Technologies, Microgravity
	Associate Editor for Journal of Drainage and Irrigation Machinery Engineering
PhD Theses	PhD Candidate Committee, Alberto Baretter, Arts et Métiers/ONERA
	PhD Candidate Committee, Hui Wang, Arts et Métiers/VirginiaTech
	PhD Candidate Committee, Shuo Liu, Arts et Métiers/VirginiaTech
	PhD Candidate Committee, Ali Maghouli, Arts et Métiers/VirginiaTech
	PhD Candidate Committee, Clémence Rannou, Arts et Métiers/ONERA
	PhD Candidate Committee, Joe El Ghossein, VirginiaTech
	PhD Thesis Reviewer, Lukas Babor, TUWien
	PhD Defence Committee, Lukas Babor, TUWien
	PhD Defence Committee, Antoine Charles, TUWien

1.6 Technical Competences

Software	Nek5000	Programming Languages	MATLAB
	FreeFEM++		C++
	FEniCS		Fortran
	OpenFoam		python
	basilisk		shell
	StarCCM+		

2 Teaching, Mentoring and Supervising Activity

2.1 Teaching Experience

Period	September 2021 – to date (36 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*CFD applied to Automobile Engines* (1st year Master)
Affiliation	Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period	March 2020 – to date (40 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*CFD applied to Turbomachinery* (1st year Master)
Affiliation	Centrale Lille, Lille Fluid Mechanics Laboratory, Lille (France)

Period	September 2020 – to date (48 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*CFD applied to Fluid Mechanics* (2nd year Master)
Affiliation	University of Lille, Lille Fluid Mechanics Laboratory, Lille (France)

Period	September 2020 – to date (21 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*Intermediate Energetics and Heat Transfer* (3rd year Bachelor)
Affiliation	Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period	September 2020 – to date (92 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*Intermediate Fluid Mechanics* (3rd year Bachelor)
Affiliation	Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period	September 2020 – to date (96 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*Design of Aeronautical Structures: CFD of an Airplane Wing* (3rd year Bachelor)
Affiliation	Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period	September 2019 – to date (156 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*Finite Element Methods in Solid Mechanics* (3rd year Bachelor)
Affiliation	Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period	September 2019 – to date (116 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*Heat Transfer and Thermal Science* (3rd year Bachelor)
Affiliation	Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)
Period	September 2019 – to date (200 teaching hours in total)
Position	*Associate Professor*, Dept. Fluid Mechanics and Energetics
Course Title	*Advanced Energetics and Turbomachinery* (1st year Master)
Affiliation	Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period	October 2012 – January 2018 (176 teaching hours in total)
Position	*University Assistant*, Inst. Fluid Mechanics and Heat Transfer
Course Title	*Numerical Methods in Fluid Dynamics* (1st year Master)
Affiliation	TU Wien, Institute of Fluid Mechanics and Heat Transfer, Vienna (Austria)

2.2 Mentoring

Mentoring summary

	Internships	Exchange programs	Bachelor's theses	Master's theses
Total	17	2	2	21
at national scale	15	–	1	4
at international scale	2	2	1	17

Internships

Student	Shaimaa Hefny (2nd year Master's student)
Period	3-months internship, summer semester 2016
Project	Heat transfer for thermocapillary liquid bridges
Affiliation	TU Wien, Vienna (Austria)
	Alexandria University (Egypt)

Student	Tuğçe Türkbay (1st year Master's student)
Period	3-months internship, summer semester 2016
Project	Lagrangian topology in lid-driven cavities
Affiliation	TU Wien, Vienna (Austria)
	Çukurova University (Turkey)

Student	Joseph Cavataio (2nd year Bachelor's student)
Period	3-months internship, summer semester 2018
Project	Airway closure in human lungs
Affiliation	University of Michigan (USA)

Student	Samantha Rondeau (2nd year Bachelor's student)
Period	3-months internship, summer semester 2018
Project	Airway closure in human lungs
Affiliation	University of Michigan (USA)

Student	Pavithra Kalarani (1st year Master's student)
Period	2-months internship, summer semester 2020
Project	Deep learning approach applied to axial compressors
Affiliation	Arts et Métiers, Lille (France)
	École Centrale de Lille, Lille (France)

Student	Sufyan Shafi (1st year Master's student)
Period	2-months internship, summer semester 2020
Project	Projection of divergence-free flows
Affiliation	Arts et Métiers, Lille (France)
	École Centrale de Lille, Lille (France)

Student	Tarkash Siddique Munawar (1st year Master's student)
Period	2-months internship, summer semester 2020
Project	Stability analysis of a model for axial compressors
Affiliation	Arts et Métiers, Lille (France)
	École Centrale de Lille, Lille (France)

Student	Murukesh Muralidhar (1st year Master's student)
Period	2-months internship, summer semester 2021
Project	Experimental characterization of water droplet impinging on a wall
Affiliation	Arts et Métiers, Lille (France)
	École Centrale de Lille, Lille (France)

Student	Venkata Hari Charan Mulakaloori (1st year Master's student)
Period	2-months internship, summer semester 2021
Project	Linear stability analysis of an annular gap between rotor and carter
Affiliation	Arts et Métiers, Lille (France)
	École Centrale de Lille, Lille (France)

Student	Megan Dlima (1st year Master's student)
Period	2-months internship, summer semester 2021
Project	Turbulent flow through a grid in a pipe using OpenFOAM
Affiliation	Arts et Métiers, Lille (France)
	École Centrale de Lille, Lille (France)

Student	François Dottori (1st year Master's student)
Period	3-months, starting during summer semester 2021
Project	Study of non-Newtonian tubular exchanger-reactors
Affiliation	Arts et Métiers, Lille (France)
	École des Mines de Douai, Douai (France)
Student	Zhongxuan Huo (1st year Master's student)
Period	6-months, starting during summer semester 2022
Project	Elastic turbulence in the curvilinear geometry
Affiliation	Arts et Métiers, Lille (France)
	Polytech Lille, Lille (France)

Student	Aaron Gregorio Coutinho (1st year Master's student)
Period	6-months, starting during summer semester 2023
Project	Simulation of interacting Coandă-effect actuators for active flow control
Affiliation	Arts et Métiers, Lille (France)

Student	Parth Patel (1st year Master's student)
Period	5-months, starting during summer semester 2024
Project	Elastic turbulence in the curvilinear geometry
Affiliation	Arts et Métiers, Lille (France)
	Polytech Lille, Lille (France)

Student	Lucas Dupuis (1st year Master's student)
Period	5-months, starting during summer semester 2024
Project	Numerical study of oscillating grid turbulence
Affiliation	Arts et Métiers, Lille (France)
	École des Mines Nord-Europe, Douai (France)

Student	Alvaro Recio (1st year Master's student)
Period	3-months, starting during summer semester 2024
Project	Mechanical analogy of surge in axial compressors
Affiliation	Arts et Métiers, Lille (France)

Student	Sudhisha Echampati (1st year Master's student)
Period	3-months, starting during summer semester 2024
Project	Numerical simulation of rotor blade cascade
Affiliation	Arts et Métiers, Lille (France)

Exchange programs

Student	Takeru Oba (2nd year Master's student)
Period	3-months internship, winter semester 2017
Project	Finite-size Lagrangian coherent structures in liquid bridges
Affiliation	TU Wien, Vienna (Austria)
	Tokyo University of Science (Japan)

Student	Saeid Panahi (1st year Ph.D. student)
Period	3-months internship, winter semester 2017
Project	Stability of an annular flow in pipes
Affiliation	TU Wien, Vienna (Austria)
	Amirkabir University of Technology (Iran)

Bachelor's theses

Student	Faraz Beladi (3rd year Bachelor's student)
Period	3-months, starting during winter semester 2017
Project	Effect of non-divergence-free error in flow topology
Affiliation	TU Wien, Vienna (Austria)

Student	Parvathy K. K. (3rd year Bachelor's student)
Period	3-months, starting during summer semester 2016
Project	Finite-size Lagrangian coherent structures
Affiliation	TU Wien, Vienna (Austria)
	Birla Institute of Technology and Science (India)

Master's theses

Student	Michael Riedl (2nd year Master's student)
Period	6-months, starting during winter semester 2015
Project	Lagrangian topology in rotating-lid cavities
Affiliation	TU Wien, Vienna (Austria)

Student	Vincze Mihály (2nd year Master's student)
Period	6-months, starting during summer semester 2015
Project	Lagrangian topology in lid-driven cavities
Affiliation	TU Wien, Vienna (Austria)
	Budapest University of Technology and Economics, Budapest (Hungary)

Student	Arash Hajisharifi (2nd year Master's student)
Period	6-months, starting during winter semester 2016
Project	Lagrangian topology in rotating drums
Affiliation	TU Wien, Vienna (Austria)
	University of Pisa, Pisa (Italy)

Student	Sencer Yücesan (2nd year Master's student)
Period	6-months, starting during summer semester 2017
Project	Effect of wall curvature on flow stability in lid-driven cavities
Affiliation	TU Wien, Vienna (Austria)
	Fachhochschule Wiener Neustadt, Wiener Neustadt (Austria)

Student	Charlène Phan (2nd year Master's student)
Period	6-months, starting during summer semester 2020
Project	Flow control in an axial compressor
Affiliation	Arts et Métiers, Lille (France)
	Université de Lille, Lille (France)

Student	Venkata Sai Krishna Danda (2nd year Master's student)
Period	6-months, starting during summer semester 2020
Project	Impingement of a liquid droplet on a solid substrate
Affiliation	Arts et Métiers, Lille (France)
	Universität Rostock (Germany)

Student	Intissar Benjalila (2nd year Master's student)
Period	6-months, starting during summer semester 2020
Project	Airway reopening in human lungs
Affiliation	Arts et Métiers, Lille (France)
	École des Mines de Douai, Douai (France)

Student	Pierre Leroux (2nd year Master's student)
Period	6-months, starting during summer semester 2020
Project	Design of a pintle injector
Affiliation	Arts et Métiers, Lille (France)
	Centre national d'études spatiales, Paris (France)

Student	Raj Jayeshkumar Gandhi (2nd year Master's student)
Period	5-months, starting during summer semester 2021
Project	Elastic turbulence in the curvilinear geometry
Affiliation	Arts et Métiers, Lille (France)

Student	Oğuzhan Erken (2nd year Master's student)
Period	9-months, starting during starting during summer semester 2021
Project	Three-phase airway closure in human lungs
Affiliation	Koç Üniversitesi, Istanbul (Turkey)
	Arts et Métiers, Lille (France)

Student	Oussama El Mokkadem (2nd year Master's student)
Period	6-months, starting during summer semester 2021
Project	Numerical simulations of injectors for flow control
Affiliation	Arts et Métiers, Lille (France)

Student	Charles Carre (2nd year Master's student)
Period	5-months, starting during summer semester 2022
Project	Dynamics and rupture of non-Newtonian liquids plugs in bifurcated geometry
Affiliation	Arts et Métiers, Lille (France)
	École des Mines de Douai, Douai (France)

Student	Hossameldin Abdelaziz (2nd year Master's student)
Period	6-months, starting during summer semester 2022
Project	Multi-scale matching for flows with a grid
Affiliation	Arts et Métiers, Lille (France)

Student	Aditya Rathore (2nd year Master's student)
Period	6-months, starting during summer semester 2022
Project	Simulation of interacting Coandă-effect actuators for active flow control
Affiliation	Arts et Métiers, Lille (France)

Student	Romain Peron (2nd year Master's student)
Period	6-months, starting during summer semester 2022
Project	Fluid-structure interaction between a flat plate and an incoming flow
Affiliation	Arts et Métiers, Lille (France)

Student	Morteza Naeini (2nd year Master's student)
Period	6-months, starting during summer semester 2022
Project	Elasto-inertial instabilities in a two-phase Taylor-Couette flow
Affiliation	Arts et Métiers, Lille (France)
	École des Mines de Douai, Douai (France)

Student	Zhongxuan Huo (2nd year Master's student)
Period	6-months, starting during summer semester 2023
Project	Elastic turbulence in the curvilinear geometry
Affiliation	Arts et Métiers, Lille (France) Polytech Lille, Lille (France)

Student	Rami Janbeih (2nd year Master's student)
Period	5-months, starting during summer semester 2024
Project	Simulation of non-Newtonian centrifugal pumps
Affiliation	Arts et Métiers, Lille (France)

Student	Nesrine Tounsi (2nd year Master's student)
Period	6-months, starting during summer semester 2024
Project	Inlet condition sensitivity of Coandă-effect actuators for active flow control
Affiliation	Arts et Métiers, Lille (France)

2.3 Supervision

PhD students

Student	Christian Schmidrathner
Period	9/2016–4/2018
Supervision	50% for 1.5 years together with H.C. Kuhlmann (50%)
Project	Steam sterilization
Funding	FFG project # 851030
Affiliation	TU Wien, Vienna (Austria)

Student	Meng Fan
Period	10/2019–12/2023 (defended in 12/2023)
Supervision	50% together with A. Dazin (50%)
Project	Stability and flow characterization in centrifugal pumps
Funding	CSC-ParisTech 2018
Affiliation	Arts et Métiers, Lille (France)

Student	Zhidian Yang
Period	10/2020–present
Supervision	30% together with O. Delgosha-Coutier (30%) and A. Dazin (40%)
Project	Numerical simulation, analysis, and prediction of a cavitating bubble near a wall
Funding	CSC-ParisTech 2019
Affiliation	Arts et Métiers, Lille (France)

Student	Renjie Hao
Period	7/2022–present
Supervision	30% together with A.S. Bahrani (30%) and M. Meldi (40%)
Project	Numerical and experimental study of liquid plugs in human lungs
Funding	CSC-ParisTech 2020
Affiliation	Arts et Métiers, Lille (France)

Student	Mohamed Elhawary
Period	10/2021–present
Supervision	30% together with J.-C. Loiseau (30%) and A. Dazin (40%)
Project	PINN for the physics of complex flows
Funding	ENSAM AAP PhD Theses 2021
Affiliation	Arts et Métiers, Lille (France)

Student	Hossameldin Abdelaziz
Period	10/2022–present
Supervision	50% together with M. Meldi (50%)
Project	Multi-scale matching for flows with a grid
Funding	ANR-JCJC 2021, "MultiMatchGrid"
Affiliation	Arts et Métiers, Lille (France)

Student	Bo Wang
Period	10/2022–present
Supervision	30% together with O. Delgosha-Coutier (30%) and A. Dazin (40%)
Project	Numerical study of multiple cavitating bubbles near a wall
Funding	CSC-ParisTech 2022
Affiliation	Arts et Métiers, Lille (France)

Student	Zhonxuan Hou
Period	10/2023–present
Supervision	30% together with S. Berti (30%) and A. Dazin (40%)
Project	Elastic turbulence in curvilinear geometries
Funding	CSC-ParisTech 2023
Affiliation	Arts et Métiers, Lille (France)

Student	Adou Francis Seka
Period	3/2024–present
Supervision	50% together with A. Dazin (50%)
Project	Modeling of stall in axial compressors
Funding	CIFRE-Safran
Affiliation	Arts et Métiers, Lille (France)

PostDoc researchers

Student	Meng Fan
Period	2/2024–present
Project	Numerical simulation of single- and multi-phase pumps
Funding	SuperGrid/General Electrics
Affiliation	Arts et Métiers, Lille (France)

Student	Marwane Elkarii
Period	9/2023–present
Project	Chaotic mixing, instabilities and transition in non-isothermal pipes
Funding	ANR Chaire Industrielle, "CORENSTOCK"
Affiliation	École des Mines Nord Europe, Douai (France)

3 Scientific Dissemination

3.1 Dissemination Summary

	Book Chapters	Papers	Proceedings	Conferences	Invited Talks
Total	1	56	30	54	31
as sole author/speaker	–	5	–	2	31
with Ph.D. supervisor	1	25	12	29	–
with supervised Ph.D. students	–	5	3	5	–
since joining Arts et Métiers	–	42	14	24	23

3.2 Book Chapters

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J5. F. Romanò, S. Albensoeder, H. C. Kuhlmann, *Topology of three-dimensional steady cellular flow in a two-sided anti-parallel lid-driven cavity*, J. Fluid Mech., **826** (2017) 302–334.

J6. F. Romanò, H. C. Kuhlmann, M. Ishimura, I. Ueno *Limit cycles for the motion of finite-size particles in axisymmetric thermocapillary flows in liquid bridges*, Phys. Fluids, **29** (2017) 093303.

J7. C. Kuehn, F. Romanò, H. C. Kuhlmann, *Tracking particles in flows near invariant manifolds via balance functions*, Nonlinear Dyn., **92** (2018) 983–1000.

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J10. F. Romanò, H. Wu, H. C. Kuhlmann, *A generic mechanism for finite-size coherent particle structures*, Int. J. Multiphase Flow, **111** (2019) 42–52.

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J12. F. Romanò, Parvathy K. K., H. C. Kuhlmann, *Finite-size Lagrangian coherent structures in a two-sided lid-driven cavity*, Phys. Rev. Fluids, **4** (2019) 024302.

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J14. M. Muradoglu, F. Romanò, H. Fujioka, J. B. Grotberg, *Effects of surfactant on propagation and rupture of a liquid plug in a tube.*, J. Fluid Mech., **872** (2019) 407–437.

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J16. F. Romanò, *Reconstructing the unperturbed fluid flow by tracking of large particles*, Phys. Rev. Fluids, **4** (2019) 104301.

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P2. F. Romanò, S. Albensoeder, H. C. Kuhlmann *Topology of three-dimensional steady cellular flow in a two-sided lid-driven cavity*, APS Bulletin (2015).

P3. H. C. Kuhlmann, F. Romanò, H. Wu, S. Albensoeder, *Particle-motion attractors due to particle–boundary interaction in incompressible steady three-dimensional flows*, The 20th Australasian Fluid Mechanics Conference (ed. G. Ivey, T. Zhou, N. Jones, S. Draper), Australasian Fluid Mechanics Society (2016), pp. 102, paper no. 449.

P4. F. Romanò, H. C. Kuhlmann *Topology of azimuthally travelling waves in thermocapillary liquid bridges*, APS Bulletin (2016).

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P7. H. Wu, F. Romanò, H. C. Kuhlmann, *Attractors for the motion of finite-size particles in a lid-driven cavity*, **25**. Fachtagung Experimentelle Strömungsmechanik, (2017), 62.

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P15. H. C. Kuhlmann, F. Romanò, *Finite-size coherent structures: a universal phenomenon?*, IFMC, (2019) 1–2.

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C2. F. Romanò, H. C. Kuhlmann, *Interaction of a finite-size particle with the moving lid of a cavity*, GAMM 86th Annual Scientific Conference, Lecce, Italy, March 2015.

C3. F. Romanò, H.C. Kuhlmann, *Smoothed profile method for particle-laden flows*, 21st ERCOFTAC ADA-Pilot Center Meeting, Vienna, Austria, May 2015.

C4. F. Romanò, H. C. Kuhlmann, *Numerical investigation of the interaction of a finite-size particle with a tangentially moving boundary*, CMFF'15, Budapest, Hungary, September 2015.

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C7. F. Romanò, S. Albensoeder, H. C. Kuhlmann *Topology of three-dimensional steady cellular flow in a two-sided lid-driven cavity*, 68th Annual Meeting of the APS Division of Fluid Dynamics, Boston, USA, November 2015.

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C40. C. Carré, T. Lacassagne, S. Hamidouche, F. Romanò, and A Bahrani, *Dynamique et rupture de bouchons liquides non-newtoniens en géométrie bifurquée*, Journée du GDR Micro et Nano Fluidique : Ondes, Fluides, Interfaces, Paris, France, September 2021.

C41. F. Romanò, O. Erken, M. Muradoglu, H. Fujioka, and J. B. Grotberg, *Surfactant, viscoelasticity, elasto-viscoplasticity and two-layer lining in an airway closure model*, APS, Phoenix, USA, November 2021.

C42. M. Stojanovic, H. C. Kuhlmann, and F. Romanò, *Impact of dynamic surface deformations on the flow instability in high-Prandtl-number liquid bridges*, APS, Phoenix, USA, November 2021.

C43. M. A. Elhawary, F. Romanò, J.-C. Loiseau, A. Dazin, *Machine learning for optimal flow control in an axial compressor*, Challenges and Benchmarks for quantitative AI in Complex Fluids and Complex Flows, Rome, Italy, June 2022.

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C45. M. Fan, G. Bois, A. Dazin, F. Romanò, *Effect of leakage on the performance of a centrifugal pump with a vaneless diffuser*, CMFF'22, Budapest, Hungary, September 2022.

C46. B. Fazla, O. Erken, F. Romanò, M. Muradoglu, *A viscoplastic mucus model with kinematic hardening for airway closure*, EFMC14, Athens, Greece, September 2022.

C47. J. B. Grotberg, F. Romanò, *Computational Pulmonary Edema*, APS, Indianapolis, USA, November 2022.

C48. M. Elhawary, F. Romanò, J.-C. Loiseau, and A. Dazin, *Deep neural networks for predicting and analyzing the performance of air-jets for active flow control in an axial compressor*, 15th European Conference on Turbomachinery Fluid dynamics Thermodynamics, Budapest, Hungary, April 2023.

C49. F. Romanò, *Instabilities, mixing and turbulence in single- and multi-phase systems*, Journées Scientifiques, Fluides et écoulements complexes : des solutions pour l'avenir, Nantes, France, June 2023.

C50. P. Koullapis, A. Syrakos, F. Stylianou, S. Kassinos, M. Muradoglu, Z. Yang, F. Romanò, J. B. Grotberg, *Assessment of 2-phase solvers for low capillary number flows in lung airways*, International Congress on Rheology, Athens, Greece, July 2023.

C51. F. Romanò, *A Microvascular Model of Alveolar Capillary and Interstitial Flow*, Journée Thématique M2VC Axe Biomécanique/Bio-ingénierie de la Fédération Lilloise de Mécanique, Lille, France, September 2023.

C52. J. B. Grotberg, F. Romanò, J. C. Grotberg, *A Computational Model of Pulmonary Edema*, APS, Washington, USA, November 2023.

C53. B. Fazla, O. Erken, D. Izbassarov, F. Romanò, J. B. Grotberg, M. Muradoglu, *Airway Closure: Elastoviscoplastic and Kinematic Hardening Effects in a Mucus Model*, APS, Washington, USA, November 2023.

C54. R. K. Subramanian, Z. Yang, F. Romanò, O. Coutier-Delgosha, *Pressure measurement with shock wave, and liquid jet visualization of a cavitation bubble collapsing near the hard surface*, APS, Washington, USA, November 2023.

3.6 Invited Talks

S1. F. Romanò, *Particle accumulation structures in thermocapillary liquid bridges*, Tokyo University of Science, Tokyo, Japan, March 2016.

S2. F. Romanò, *A universal mechanism for rapid particle accumulation in fluids*, PPrime, Poitiers, France, November 2017.

S3. F. Romanò, *Lagrangian chaos: mixing and coherent structures*, Institute of Science and Technology, Vienna, Austria, January 2018.

S4. F. Romanò, *Liquid plug formation in an airway closure model*, Institute of Science and Technology, Vienna, Austria, September 2018.

S5. F. Romanò, *Airway closure in microscopic bronchioles* (talk held within the framework of the course BIOMEDE 476 001 WN 2019), University of Michigan, Ann Arbor, USA, April 2019.*

S6. F. Romanò, *Particle coherent structures in incompressible fluid flows*, Technische Universität München, Munich, Germany, June 2019.

S7. F. Romanò, *Peristaltic flow in the glymphatic system*, Technische Universität Wien, Vienna, Austria, June 2019.

S8. F. Romanò, *Peristaltic flow in the glymphatic system*, Institute of Science and Technology, Vienna, Austria, June 2019.

S9. F. Romanò, *Finite-Size Lagrangian coherent structures*, University of Lille, Lille, France, September 2019.*

S10. F. Romanò, *Effect of viscoelasticity and surfactant in an airway closure model*, University of Lille, Lille, France, May 2020.

S11. F. Romanò, *Flow Mixing and Particle Transport in Cavities*, **Keynote speaker**, 5th Jin Shan International Symposium on Fluids Machinery and Engineering, Zhenjiang, China, November 2020.

S12. F. Romanò, *Reconstructing the fluid flow by tracking of large particles*, **Invited symposium speaker**, 1st BICTAM-CISM Symposium on Dispersed Multiphase Flows, Beijing, China, March 2021.

S13. F. Romanò, *Airway closure: the effects of surfactant, viscoelasticity, elastoviscoplasticity and two-layer lining*, University of Udine, Udine, Italy, November 2021.

S14. F. Romanò, *Airway closure: the effect of surfactant, viscoelasticity, elastoviscoplasticity and two-layer lining*, **Keynote speaker**, Mathematics and Physics of Fluids 2021, IIT Gandhinagar, India, November 2021.

S15. F. Romanò, *The Fluid Mechanics of Lung Clogs in the Bronchioles*, Institute of Science and Technology, Vienna, Austria, November 2021.

S16. F. Romanò, *The Fluid Mechanics of Lung Clogs in the Bronchioles*, VirginiaTech, Roanoke, Virginia, USA, November 2021.

S17. F. Romanò, *The Fluid Mechanics of Airway Closure in the Bronchioles*, LMFL Fluid Mechanics Webinar, LMFL, Lille, France, February 2022. `YouTube`*

S18. F. Romanò, *Mixing and Accumulation of Particles in Cavities at Low and Moderate Reynolds Numbers*, LTEN, Polytech Nantes, Nantes, France, April 2022.

S19. F. Romanò, *Rotating instabilities in a centrifugal pump*, Lille Turbulence Program, LMFL, Lille, France, July 2022.*

S20. F. Romanò, *The Fluid Mechanics of Airway Closure in the Bronchioles*, DynFluid, Arts et Métiers, Paris, France, November 2022.

S21. F. Romanò, *The Fluid Mechanics of Airway Closure in the Bronchioles*, Department of Physics, University of Rome Tor Vergata, Rome, Italy, January 2023.

S22. F. Romanò, *Hydrodynamic Instability in Thermocapillary Liquid Bridges*, LEGI, Université Grenoble Alpes, Grenoble, France, January 2023.

S23. F. Romanò, *Hydrodynamic Instability in Thermocapillary Liquid Bridges*, ETSIAE-UPM and Numath's group, Spain, February 2023.

S24. F. Romanò, *Mixing and Accumulation of Particles in Cavities at Low and Moderate Reynolds Numbers*, VirginiaTech, Roanoke, Virginia, USA, May 2023.

S25. F. Romanò, *The Fluid Mechanics of Airway Closure in the Bronchioles*, Department of Biomedical Engineering, Atlanta, GeorgiaTech, Georgia, USA, May 2023.

S26. F. Romanò, *Interstitial Flow: Two Elucidating Examples of First-Principle Modeling applied to Microscale Bioflows*, **Invited speaker**, Nano S&T-2023, Osaka, Japan, May 2023.

S27. F. Romanò, *Machine Learning for Optimal Flow Control in an Axial Compressor*, **Keynote speaker**, Artificial Intelligence meets Fluid Dynamics, India, July 2023. `YouTube`

S28. F. Romanò, *Pulmonary Edema: A Microvascular Septal Tract Model*, Institute of Fluid Mechanics and Heat Transfer, TUWien, Vienna, Austria, July 2023.

S29. F. Romanò, *Instabilities in a Centrifugal Pump*, **Plenary speaker**, 17th Asian International Conference on Fluid Machinery (AICFM17), Zhenjiang, China, October 2023.

S30. F. Romanò, *The Fluid Mechanics of Airway Closure in the Bronchioles*, FAST, Université Paris-Saclay, Paris, France, October 2023.

S31. F. Romanò, *Self-Organizing Particles in a Chaotic Thermocapillary Liquid Bridge*, TU Dresden, Dresden, Germany, March 2024.

* = invited talks internal to the same affiliation