

Francesco Romano

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Nationality Italian
Date of birth December 15th, 1988
Marital status Married, no children



1 Research Activity

1.1 Career

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

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

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

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

1.2 Projects and Grants

Project Multiphase flow through converging nozzles
Role Research
Grant No. FFG Innovation Check #847669 ($\approx 10\text{k€}$)

Project Steam sterilisation
Role Editing of the project proposal and supervision
Grant No. FFG Project #851030 (1 Ph.D. student + supervision costs $\approx 160\text{k€}$)

Project Dynamics of suspended particles in periodic vortex flows
Role Research
Grant No. ESA-SciSpace #AO-2000-091

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

Project Modelling Support to ESA-JAXA JEREMI project on ISS
Role Editing of the project proposal and research
Grant No. ESA-SciSpace #PO-4000121111 (1 PostDoc for 3 years $\approx 250\text{k€}$)

Project Microfluidic tissue engineering of small airway injuries
Role Research and Consultancy for University of Michigan
Grant No. NIH research Grant #1R01HL136141-01 (1 PostDoc for 3 years $\approx 200\text{k\$}$)

Project Stability Analysis for the JEREMI Experiment
Role Editing of the project proposal
Grant No. FFG Project "SAJE", accepted (1 Ph.D. student for 3 years $\approx 270\text{k€}$)

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| Project | Intricate bodies in the boundary layer bridging fluid mechanics, morphology and ecology in larval Drusinae (Insecta: Trichoptera) |
| Role | Editing of the project proposal |
| Grant No. | FWF Project #P30048-B29 (1 Ph.D. student and a PostDoc for 3 years $\approx 370\text{k€}$) |
| | |
| Project | Modellisation of the turbulence |
| Role | Co-PI, editing of the project proposal, research and supervision |
| Grant No. | GENCI Project #A0062A01741 (0.5M CPU hours) |
| | |
| Project | Stability analysis in a centrifugal pump |
| Role | Editing of the project proposal, research and supervision |
| Grant No. | CSC-ParisTech 2018 (1 Ph.D. student $\approx 140\text{k€}$) |
| | |
| Project | Modellisation of the turbulence |
| Role | Co-PI, editing of the project proposal, research and supervision |
| Grant No. | GENCI Project #A0062A01741 (1.5M CPU hours) |
| | |
| Project | Horizon2020: Design and control of an axial compressor |
| Role | Research and supervision |
| Grant No. | CleanSky: ACONIT ($\approx 1.6\text{M€}$) |
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| Project | Numerical study of a cavitating bubble near a wall |
| Role | Co-PI, editing of the project proposal, research and supervision |
| Grant No. | CSC-ParisTech 2019 (1 Ph.D. student $\approx 140\text{k€}$) |
| | |
| Project | Airway closure in human lungs |
| Role | Research and supervision |
| Grant No. | TUBITAK #119M513 (1 Ph.D. student $\approx 70\text{k€}$) |
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| Project | Design of a pintle injector |
| Role | Co-PI, supervision |
| Grant No. | CNES: PERSEUS |
| | |
| Project | Design and simulation of an two-phase pipeline with a pump-turbine |
| Role | Co-PI, supervision |
| Grant No. | SuperGrid/General Electric (1 Ph.D. student + supervision costs $\approx 200\text{k€}$) |
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| Project | Modellisation of turbulence |
| Role | Supervision |
| Grant No. | GENCI Project #A0062A01741 (5M CPU hours) |
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| Project | Numerical and experimental study of liquid plugs in human lungs |
| Role | Co-PI, editing of the project proposal, research and supervision |
| Grant No. | CSC-ParisTech 2020 (1 Ph.D. student $\approx 140\text{k€}$) |
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| Project | PINN for the physics of complex flows |
| Role | Co-PI, editing of the project proposal and supervision |
| Grant No. | ENSAM AAP Ph.D. Theses 2021 (1 Ph.D. student $\approx 110\text{k€}$) |
| | |
| Project | Multi-scale matching for flows with a grid |
| Role | PI, sole author of the project proposal and supervision |
| Grant No. | ANR-JCJC 2021 (1 Master student + 1 Ph.D. student + 1 PostDoc for 1 year $\approx 220\text{k€}$) |
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| Project | Master Theses |
| Role | Co-PI, editing of the project proposal and supervision |
| Grant No. | LMFL & IMT Lille Douai (7 Master student $\approx 25\text{k€}$) |

1.3 Awards and Invited Talks

- Awards Medal for graduation with honors, University of Pisa, 2012
Honorary Franklin Membership, Membership ID #YG60806, 2018
Qualification as Maître de Conférences #19260330790, 2019
Featured Paper on *Chaos* **30**, 2020
Honorary Rosalind Member of London Journals Press, Membership ID #WQ06394, 2020
- Grants PostDoc Fellowship, Mech. Eng., TU Wien, Vienna, Austria, 2016–2018
Sponsorship for Computational Resources: cluster VSC at TU Wien, 2018 to present
PostDoc Fellowship, Biomedic. Eng., Univ. of Michigan, Ann Arbor, USA, 2018–2019
Sponsorship for Computational Resources: cluster Flux at Univ. of Michigan, 2019 to present
CSC Funding for 1 Ph.D. Thesis, 2019
ENSAM Funding for 3 M.Sc. Theses, 2019
GENCI Computational Resources: cluster Jean-Zay, 2019 to present
IMT Lille Douai Funding for 1 M.Sc. Thesis, 2019
CSC Funding for 1 Ph.D. Thesis, 2020
IMT Lille Douai Funding for 1 M.Sc. Thesis, 2020
SuperGrid Funding for 1 Ph.D. Thesis, 2020
CSC Funding for 1 Ph.D. Thesis, 2021
ENSAM Funding for 2 M.Sc. Theses, 2021
ENSAM Funding for 1 Ph.D. Thesis, 2021
ANR Funding for 1 M.Sc. Thesis, 1 Ph.D. Thesis and 1yr Post.Doc., 2021
- Invited Talks F. Romanò, *Particle accumulation structures in thermocapillary liquid bridges*, Tokyo University of Science, Tokyo, Japan, March 2016.
F. Romanò, *A universal mechanism for rapid particle accumulation in fluids*, PPrime, Poitiers, France, November 2017.
F. Romanò, *Lagrangian chaos: mixing and coherent structures*, Institute of Science and Technology, Vienna, Austria, January 2018.
F. Romanò, *Liquid plug formation in an airway closure model*, Institute of Science and Technology, Vienna, Austria, September 2018.
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.*
F. Romanò, *Particle coherent structures in incompressible fluid flows*, Technische Universität München, Munich, Germany, June 2019.
F. Romanò, *Peristaltic flow in the lymphatic system*, Technische Universität Wien, Vienna, Austria, June 2019.
F. Romanò, *Peristaltic flow in the lymphatic system*, Institute of Science and Technology, Vienna, Austria, June 2019.
F. Romanò, *Finite-Size Lagrangian coherent structures*, University of Lille, Lille, France, September 2019.*
F. Romanò, *Effect of viscoelasticity and surfactant in an airway closure model*, University of Lille, Lille, France, May 2020.
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.
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.
F. Romanò, *Airway closure: the effects of surfactant, viscoelasticity, elastoviscoplasticity and two-layer lining*, University of Udine, Udine, Italy, November 2021.
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.

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

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

F. Romanò, *The Fluid Mechanics of Airway Closure in the Bronchioles*, LMFL Fluid Mechanics Webinar, LMFL, Lille, France, February 2022 [YouTube](#).*

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

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

* = invited talks internal to the same affiliation

1.4 Organizing, Editing and Reviewing Activity

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| 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 of the Conference on Modelling Fluid Flow (CMFF'18), Budapest, 2018 Reviewer of the Int. Conference on Multiphase Flow (ICMF2019), Rio de Janeiro, 2019 Reviewer of the Conf. Mechanical, Electric and Industrial Eng. (MEIE 2019), China, 2018 Reviewer of the Conference on Physics, Mathematics and Statistics (ICPMS2019), China, 2019 Reviewer of the European Conference on Turbomachinery (ECT14), Gdansk, 2021 Scientific Committee, Conference on Modelling Fluid Flow (CMFF'22), Budapest, 2022 |
| Seminars | Organizer of Scientific Seminars at Laboratoire de Mécanique des Fluides de Lille, 2019–2023 Organizer of the Multimedia Footage, LMFL Fluid Mechanics Webinars, YouTube , 2020–2023 |
| Reviewer | 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 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 Journal of Applied Mathematics and Computational Mechanics Journal of Engineering and Technological Sciences Journal of Fluid Mechanics Journal of Scientific Computing Meccanica Microgravity Science and Technology Philosophical Transactions of the Royal Society A Physics of Fluids Science Progress Scientific Reports Springer Nature Applied Science Theoretical and Computational Fluid Dynamics Waves in Random and Complex Media World Journal of Mechanics |
| Editor | Reviewer Editor for Frontiers in Space Technologies, Microgravity |

1.5 Technical Competences

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|----------|-------------|-----------------------|---------|
| Software | Nek5000 | Programming Languages | MATLAB |
| | FreeFEM++ | | C++ |
| | FEniCS | | Fortran |
| | OpenFoam | | python |
| | basilisk | | shell |
| | NGSolve | | |
| | Fluent | | |
| | Ansys | | |
| | StarCCM+ | | |
| | DS Catia V5 | | |
| | Gambit | | |
| | DistMesh | | |
| | ParaView | | |

2 Teaching Activity

2.1 Teaching Experience

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| Period | September 2021 – to date |
| Qualification | <i>Associate Professor</i> , Department of Fluid Mechanics and Energetics |
| Course Title | <i>CFD applied to Automobile Engines</i> |
| Affiliation | Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France) |
| Period | March 2020 – to date |
| Qualification | <i>Associate Professor</i> , Department of Fluid Mechanics and Energetics |
| Course Title | <i>CFD applied to Turbomachinery</i> |
| Affiliation | Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France) |
| Period | September 2020 – to date |
| Qualification | <i>Associate Professor</i> , Department of Fluid Mechanics and Energetics |
| Course Title | <i>CFD applied to Fluid Mechanics</i> |
| Affiliation | Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France) |
| Period | September 2020 – to date |
| Qualification | <i>Associate Professor</i> , Department of Fluid Mechanics and Energetics |
| Course Title | <i>Intermediate Energetics and Heat Transfer</i> |
| Affiliation | Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France) |
| Period | September 2020 – to date |
| Qualification | <i>Associate Professor</i> , Department of Fluid Mechanics and Energetics |
| Course Title | <i>Intermediate Fluid Mechanics</i> |
| Affiliation | Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France) |
| Period | September 2020 – to date |
| Qualification | <i>Associate Professor</i> , Department of Fluid Mechanics and Energetics |
| Course Title | <i>Design of Aeronautical Structures: CFD Simulations of an Airplane Wing</i> |
| Affiliation | Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France) |
| Period | September 2019 – to date |
| Qualification | <i>Associate Professor</i> , Department of Fluid Mechanics and Energetics |
| Course Title | <i>Finite Element Methods in Solid Mechanics</i> |
| Affiliation | Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France) |
| Period | September 2019 – to date |
| Qualification | <i>Associate Professor</i> , Department of Fluid Mechanics and Energetics |
| Course Title | <i>Heat Transfer and Thermal Science</i> |
| Affiliation | Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France) |
| Period | September 2019 – to date |

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *Advanced Energetics and Turbomachinery*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period October 2012 – January 2018

Qualification *University Assistant*, Institute of Fluid Mechanics and Heat Transfer
 Course Title *Numerical Methods in Fluid Dynamics*
 Affiliation Technische Universität Wien, Institute of Fluid Mechanics and Heat Transfer, Vienna (Austria)

2.2 Examining Experience

Period March 2020 – to date

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *CFD applied to Turbomachinery*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period September 2020 – to date

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *CFD applied to Fluid Mechanics*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period September 2020 – to date

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *Intermediate Energetics and Heat Transfer*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period September 2020 – to date

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *Intermediate Fluid Mechanics*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period September 2020 – to date

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *Design of Aeronautical Structures: CFD Simulations of an Airplane Wing*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period September 2019 – to date

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *Finite Element Methods in Solid Mechanics*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period September 2019 – to date

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *Energetics and Thermal Science*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period September 2019 – to date

Qualification *Associate Professor*, Department of Fluid Mechanics and Energetics
 Course Title *Advanced Energetics and Turbomachinery*
 Affiliation Arts et Métiers, Lille Fluid Mechanics Laboratory, Lille (France)

Period October 2012 – January 2018

Qualification *University Assistant*, Institute of Fluid Mechanics and Heat Transfer
 Course Title *Numerical Methods in Fluid Dynamics*
 Affiliation Technische Universität Wien, Institute of Fluid Mechanics and Heat Transfer,, Vienna (Austria)

Period October 2012 – January 2018

Qualification *University Assistant*, Institute of Fluid Mechanics and Heat Transfer
 Course Title *Numerical Methods for Engineering*
 Affiliation Technische Universität Wien, Institute of Fluid Mechanics and Heat Transfer,, Vienna (Austria)

2.3 Mentoring

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| Student | Shaimaa Hefny |
| Project | Internship, Heat transfer for thermocapillary liquid bridges |
| Affiliation | Technische Universität Wien, Vienna (Austria) Alexandria University (Egypt) |
| Student | Tuğçe Türkbay |
| Project | Internship, Lagrangian topology in lid-driven cavities |
| Affiliation | Technische Universität Wien, Vienna (Austria) Çukurova University (Turkey) |
| Student | Joseph Cavataio |
| Project | Internship, Airway closure in human lungs |
| Affiliation | University of Michigan (USA) |
| Student | Samantha Rondeau |
| Project | Internship, Airway closure in human lungs |
| Affiliation | University of Michigan (USA) |
| Student | Pavithra Kalarani |
| Project | Internship, Deep learning approach applied to axial compressors |
| Affiliation | Arts et Métiers, Lille (France) École Centrale de Lille, Lille (France) |
| Student | Sufyan Shafi |
| Project | Internship, Projection of divergence-free flows |
| Affiliation | Arts et Métiers, Lille (France) École Centrale de Lille, Lille (France) |
| Student | Tarkash Siddique Munawar |
| Project | Internship, Stability analysis of a model for axial compressors |
| Affiliation | Arts et Métiers, Lille (France) École Centrale de Lille, Lille (France) |
| Student | Murukesh Muralidhar |
| Project | Internship, 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 |
| Project | Internship, 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 |
| Project | Internship, Turbulent flow through a grid in a simple and annular pipe using OpenFOAM |
| Affiliation | Arts et Métiers, Lille (France) École Centrale de Lille, Lille (France) |
| Student | Takeru Oba |
| Project | Exchange Student Scholarship, Finite-size Lagrangian coherent structures in liquid bridges |
| Affiliation | Technische Universität Wien, Vienna (Austria) Tokyo University of Science (Japan) |
| Student | Saeid Panahi |
| Project | Exchange Student Scholarship, Stability of an annular flow in pipes |
| Affiliation | Technische Universität Wien, Vienna (Austria) Amirkabir University of Technology (Iran) |

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| Student | Faraz Beladi |
| Project | Bachelor Thesis, Effect of non-divergence-free error in flow topology |
| Affiliation | Technische Universität Wien, Vienna (Austria) |
| Student | Parvathy K. K. |
| Project | Bachelor Thesis, Finite-size Lagrangian coherent structures |
| Affiliation | Technische Universität Wien, Vienna (Austria) Birla Institute of Technology and Science (India) |
| Student | Michael Riedl |
| Project | Master Thesis, Lagrangian topology in rotating-lid cavities |
| Affiliation | Technische Universität Wien, Vienna (Austria) |
| Student | Vincze Mihály |
| Project | Master Thesis, Lagrangian topology in lid-driven cavities |
| Affiliation | Technische Universität Wien, Vienna (Austria) Budapest University of Technology and Economics, Budapest (Hungary) |
| Student | Arash Hajisharifi |
| Project | Master Thesis, Lagrangian topology in rotating drums |
| Affiliation | Technische Universität Wien, Vienna (Austria) University of Pisa, Pisa (Italy) |
| Student | Sencer Yücesan |
| Project | Master Thesis, Effect of wall curvature on flow stability in lid-driven cavities |
| Affiliation | Technische Universität Wien, Vienna (Austria) Fachhochschule Wiener Neustadt, Wiener Neustadt (Austria) |
| Student | Charlène Phan |
| Project | Master Thesis, Flow control in an axial compressor |
| Affiliation | Arts et Métiers, Lille (France) Université de Lille, Lille (France) |
| Student | Venkata Sai Krishna Danda |
| Project | Master Thesis, Impingement of a liquid droplet on a solid substrate |
| Affiliation | Arts et Métiers, Lille (France) Universität Rostock (Germany) |
| Student | Intissar Benjalila |
| Project | Master Thesis, Airway reopening in human lungs |
| Affiliation | Arts et Métiers, Lille (France) École des Mines de Douai, Douai (France) |
| Student | Pierre Leroux |
| Project | Master Thesis, Design of a pintle injector |
| Affiliation | Arts et Métiers, Lille (France) Centre national d'études spatiales, Paris (France) |
| Student | François Dottori |
| Project | Master Thesis, Study of non-Newtonian tubular exchanger-reactors |
| Affiliation | Arts et Métiers, Lille (France) École des Mines de Douai, Douai (France) |
| Student | Raj Jayeshkumar Gandhi |
| Project | Master Thesis, Elastic turbulence in the curvilinear geometry |
| Affiliation | Arts et Métiers, Lille (France) |
| Student | Oussama El Mokeddem |
| Project | Master Thesis, Numerical simulations of injectors for flow control |

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| Affiliation | Arts et Métiers, Lille (France) |
| Student | Charles Carre |
| Project | Master Thesis, 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 |
| Project | Master Thesis, Multi-scale matching for flows with a grid |
| Affiliation | Arts et Métiers, Lille (France) |
| Student | Zhongxuan Huo |
| Project | Master Thesis, Elastic turbulence in the curvilinear geometry |
| Affiliation | Arts et Métiers, Lille (France) |
| Student | Aditya Rathore |
| Project | Master Thesis, Simulation of interacting Coandă-effect actuators for active flow control |
| Affiliation | Arts et Métiers, Lille (France) |
| Student | Romain Peron |
| Project | Master Thesis, Fluid-structure interaction between a flat plate and an incoming flow |
| Affiliation | Arts et Métiers, Lille (France) |
| Student | Morteza Naeini |
| Project | Master Thesis, Elasto-inertial instabilities in a two-phase Taylor-Couette flow |
| Affiliation | Arts et Métiers, Lille (France) École des Mines de Douai, Douai (France) |
| Student | Christian Schmidrathner |
| Project | FFG project # 851030, PhD Thesis, steam sterilization |
| Affiliation | TU Wien, Vienna (Austria) Miele, Salzburg (Austria) |
| Student | Meng Fan |
| Project | PhD Thesis, stability and flow characterization in centrifugal pumps |
| Affiliation | Arts et Métiers, Lille (France) |
| Student | Gabriel Detraz |
| Project | PhD Thesis, flow characterization in multiphase pumps/turbines |
| Affiliation | SuperGrid, Grenoble (France) Arts et Métiers, Lille (France) |
| Student | Oğuzhan Erken |
| Project | PhD Thesis, three-phase airway closure in human lungs |
| Affiliation | Koç Üniversitesi, Istanbul (Turkey) Arts et Métiers, Lille (France) |
| Student | Zhidian Yang |
| Project | PhD Thesis, numerical simulation, analysis, and prediction of a cavitating bubble near a wall |
| Affiliation | Arts et Métiers, Lille (France) |
| Student | Mohamed Elhawary |
| Project | PhD Thesis, PINN for the physics of complex flows |
| Affiliation | Arts et Métiers, Lille (France) |
| Student | Renjie Hao |
| Project | PhD Thesis, numerical and experimental study of liquid plugs in human lungs |
| Affiliation | Arts et Métiers, Lille (France) |

Student Hossameldin Abdelaziz
Project PhD Thesis, Multi-scale matching for flows with a grid
Affiliation Arts et Métiers, Lille (France)

3 Education

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|--------------|---|
| Period | October 2012 – September 2016 |
| Degree | <i>PhD</i> , Mechanical Engineering, full marks and distinction |
| Thesis Title | <i>Particle accumulation structures in boundary-driven flows</i> |
| Supervisor | Prof. Hendrik C. Kuhlmann |
| Affiliation | Technische Universität Wien, Institute of Fluid Mechanics and Heat Transfer, Vienna (Austria) |
| Period | October 2010 – July 2012 |
| Degree | <i>MSc</i> , Aerospace Engineering, full marks and highest honors |
| Thesis Title | <i>Analysis of some streaks generation method in a Blasius boundary layer</i> |
| Supervisor | Prof. (Assoc.) Simone Camarri |
| Affiliation | University of Pisa, Department of Aerospace Engineering, Pisa (Italy) |
| Period | September 2007 – October 2010 |
| Degree | <i>BSc</i> , Aerospace Engineering, full marks |
| Thesis Title | <i>Transient of Poiseuille flow simulation using FreeFEM++</i> |
| Supervisor | Prof. Maria Vittoria Salvetti |
| Affiliation | University of Pisa, Department of Aerospace Engineering, Pisa (Italy) |

4 Scientific Production

4.1 Book Chapters

1. H. C. Kuhlmann, F. Romanò, *The lid-driven cavity*, Computational Modelling of Bifurcations and Instabilities in Fluid Dynamics, Springer, **50** (2019) 233–310.

4.2 Scientific Papers

1. F. Romanò, H. C. Kuhlmann, *Numerical investigation of the interaction of a finite-size particle with a tangentially moving boundary*, Int. J. Heat Fluid Fl., **62** (A) (2016) 75–82.
2. F. Romanò, H. C. Kuhlmann, *Smoothed-profile method for momentum and heat transfer in particulate flows*, Int. J. Numer. Meth. Fluids, **83** (6) (2017) 485–512.
3. F. Romanò, H. C. Kuhlmann, *Particle–free-surface interaction in a shear-driven cavity flow*, Theor. Comp. Fluid Dyn., **31** (4) (2017) 427–445.
4. F. Romanò, A. Hajisharifi, H. C. Kuhlmann, *Cellular flow in a partially filled rotating drum: regular and chaotic advection*, J. Fluid Mech., **825** (2017) 631–650.
5. 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.
6. 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.
7. C. Kuehn, F. Romanò, H. C. Kuhlmann, *Tracking particles in flows near invariant manifolds via balance functions*, Nonlinear Dynamics, Nonlinear Dyn., **92** (2018) 983–1000.
8. F. Romanò, H. C. Kuhlmann, *Finite-size Lagrangian coherent structures in thermocapillary liquid bridges*, Phys. Rev. Fluids, **3** (2018) 094302.
9. F. Romanò, *Oscillatory switching centrifugation: dynamics of a particle in a pulsating vortex*, J. Fluid Mech., **857** (2018) R3.
10. F. Romanò, H. Wu, H. C. Kuhlmann, *A generic mechanism for finite-size coherent particle structures*, Int. J. Multiphase Flow, **111** (2019) 42–52.
11. F. Romanò, H. C. Kuhlmann, *Heat transfer across the free surface of a thermocapillary liquid bridge*, Tech. Mech., **39** (2019) 72–84.
12. 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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