

Curriculum Vitae

Matteo Mancinelli, Ph.D.

Employment History

- 2022 – Present ■ **Researcher (RTDa)**, Department of Civil Computer Science and Aeronautical Technologies Engineering, Università degli Studi Roma Tre, Rome, Italy.
- 2020 – 2022 ■ **Researcher**, Centre National de la Recherche Scientifique, Institut Pprime (Département Fluides Thermique et Combustion), Poitiers, France.
- 2019 – 2020 ■ **Post-doctoral research fellow**, Université de Poitiers, Institut Pprime (Département Fluides Thermique et Combustion), Poitiers, France.
- 2017 – 2019 ■ **Post-doctoral research fellow**, Centre National d'Études Spatiales, Institut Pprime (Département Fluides Thermique et Combustion), Poitiers, France.
- 2017 ■ **Post-doctoral research fellow**, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.
- 2014 – 2017 ■ **Ph.D. student**, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.
- 2013 ■ **Continuous and coordinated contractual relationship**, *Development of time-frequency analysis techniques based on wavelet transform for data processing inturbulent jets*, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.
- 2012 – 2013 ■ **Intern**, Department of Acoustics and Environment, Airbus Operations S.A.S., Toulouse, France.

Education & Training

- 2017 – 2018 ■ **Hydrodynamic stability**, École Nationale Supérieure de Mécanique et Aérotechnique, Poitiers, France.
- 2014 – 2016 ■ **Ph.D., Mechanical and Industrial Engineering cum laude**, Department of Engineering, Università degli Studi Roma Tre.
Thesis title: *Experimental investigation of compressible and incompressible jet aeroacoustics in free and installed configurations through advanced time-frequency analysis.*
- 2010 – 2013 ■ **Master Science, Aeronautical Engineering cum laude**, Department of Engineering, Università degli Studi Roma Tre.
Thesis title: *Jet aeroacoustics: analysis of large-scale EXEJET2 experimental tests including pylon and wing model effects.*
- 2006 – 2010 ■ **Bachelor Science, Mechanical and Industrial Engineering**, Department of Engineering, Università degli Studi Roma Tre.
Thesis title: *Aerodynamic characterisation of a low-speed jet.*

Research Publications

Journal Articles

- 1 M. Mancinelli, P. Jordan, and A. Lebedev, “Real-time estimation of jet-surface interaction noise,” *Flow, Turbulence and Combustion*, pp. 1–21, 2023.
- 2 M. Mancinelli, E. Martini, V. Jaunet, P. Jordan, A. Towne, and Y. Gervais, “Reflection and transmission of a kelvin–helmholtz wave incident on a shock in a jet,” *Journal of Fluid Mechanics*, vol. 954, A9, 2023.
- 3 M. N. Stavropoulos, M. Mancinelli, P. Jordan, *et al.*, “The axisymmetric screech tones of round twin jets examined via linear stability theory,” *Journal of Fluid Mechanics*, vol. 965, A11, 2023.

- 4 M. Mancinelli, E. Martini, V. Jaunet, and P. Jordan, "Including acoustic modes in the vortex-sheet eigenbasis of a jet," *The Journal of the Acoustical Society of America*, vol. 151, no. 2, pp. 852–860, 2022.
- 5 P. A. S. Nogueira, V. Jaunet, M. Mancinelli, P. Jordan, and D. M. Edgington-Mitchell, "Closure mechanism of the a1 and a2 modes in jet screech," *Journal of Fluid Mechanics*, vol. 936, A10, 2022.
- 6 M. Mancinelli, V. Jaunet, P. Jordan, and A. Towne, "A complex-valued resonance model for axisymmetric screech tones in supersonic jets," *Journal of Fluid Mechanics*, vol. 928, A32, 2021.
- 7 S. Meloni, R. Camussi, A. Di Marco, and M. Mancinelli, "Single and multivariate statistics of jet-induced pressure fluctuations over an infinite plate," *Applied Sciences*, vol. 10, no. 13, p. 4605, 2020.
- 8 S. Meloni, A. Di Marco, M. Mancinelli, and R. Camussi, "Experimental investigation of jet-induced wall pressure fluctuations over a tangential flat plate at two reynolds numbers," *Scientific Reports*, vol. 10, no. 1, p. 9140, 2020.
- 9 S. Meloni, M. Mancinelli, R. Camussi, and J. Huber, "Wall-pressure fluctuations induced by a compressible jet in installed configuration," *AIAA Journal*, vol. 58, no. 7, pp. 2991–3000, 2020.
- 10 M. Mancinelli, V. Jaunet, P. Jordan, and A. Towne, "Screech-tone prediction using upstream-travelling jet modes," *Experiments in Fluids*, vol. 60, pp. 1–9, 2019.
- 11 S. Meloni, A. Di Marco, M. Mancinelli, and R. Camussi, "Wall-pressure fluctuations induced by a compressible jet flow over a flat plate at different mach numbers," *Experiments in Fluids*, vol. 60, pp. 1–11, 2019.
- 12 M. Mancinelli and R. Camussi, "Acceleration and wall pressure fluctuations generated by an incompressible jet in installed configuration," *Comptes Rendus. Mécanique*, vol. 346, no. 10, pp. 919–931, 2018.
- 13 M. Mancinelli, T. Pagliaroli, R. Camussi, and T. Castelain, "On the hydrodynamic and acoustic nature of pressure proper orthogonal decomposition modes in the near field of a compressible jet," *Journal of Fluid Mechanics*, vol. 836, pp. 998–1008, 2018.
- 14 T. Pagliaroli, M. Mancinelli, G. Troiani, U. Iemma, and R. Camussi, "Fourier and wavelet analyses of intermittent and resonant pressure components in a slot burner," *Journal of Sound and Vibration*, vol. 413, pp. 205–224, 2018.
- 15 R. Camussi, M. Mancinelli, and A. Di Marco, "Intermittency and stochastic modeling of hydrodynamic pressure fluctuations in the near field of compressible jets," *International Journal of Heat and Fluid Flow*, vol. 68, pp. 180–188, 2017.
- 16 M. Mancinelli, A. Di Marco, and R. Camussi, "Multivariate and conditioned statistics of velocity and wall pressure fluctuations induced by a jet interacting with a flat plate," *Journal of Fluid Mechanics*, vol. 823, pp. 134–165, 2017.
- 17 M. Mancinelli, T. Pagliaroli, A. Di Marco, R. Camussi, and T. Castelain, "Wavelet decomposition of hydrodynamic and acoustic pressures in the near field of the jet," *Journal of Fluid Mechanics*, vol. 813, pp. 716–749, 2017.
- 18 A. Di Marco, M. Mancinelli, and R. Camussi, "Flow-induced pressure fluctuations of a moderate reynolds number jet interacting with a tangential flat plate," *Advances in aircraft and spacecraft science*, vol. 3, no. 3, p. 243, 2016.
- 19 A. Di Marco, M. Mancinelli, and R. Camussi, "Pressure and velocity measurements of an incompressible moderate reynolds number jet interacting with a tangential flat plate," *Journal of Fluid Mechanics*, vol. 770, pp. 247–272, 2015.

Conference Proceedings

- 1 M. Falsi, I. Zaman, M. Mancinelli, *et al.*, "Experimental investigation of the noise emitted by two different propellers ingesting a planar boundary layer," in *Materials Research Proceedings, AIDAA*, 2023.
- 2 M. Mancinelli, S. Meloni, and R. Camussi, "An experimental investigation of the interaction between a supersonic jet and a flat plate," in *Proceedings of the International Congress on Sound and Vibration*, 2023.
- 3 S. Meloni, M. Mancinelli, R. Camussi, and C. Bogey, "The effects of inner boundary layer thickness on the near pressure field of a subsonic jet," in *10th Convention of the European Acoustics Association*, EDP Sciences, 2023, pp. 5957–5962.
- 4 S. Meloni, R. Camussi, M. Mancinelli, and C. Bogey, "A parametric analysis of the effect of the jet initial conditions on the wavelet-decomposed near-field acoustic pressure," in *AIAA AVIATION 2023 Forum*, 2023, p. 4289.
- 5 M. Mancinelli, P. Jordan, A. Lebedev, and R. Kari, "Exploring flexible trailing edge properties to reduce installed jet noise in a jet-plate configuration," in *28th AIAA/CEAS Aeroacoustics 2022 Conference*, 2022, p. 2872.
- 6 M. Mancinelli, P. Jordan, A. Lebedev, and R. Kari, "Real-time jet-plate interaction noise estimation based on near-field sensor readings," in *28th AIAA/CEAS Aeroacoustics 2022 Conference*, 2022, p. 2871.
- 7 M. Mancinelli, E. Martini, V. Jaunet, and P. Jordan, "Can we describe acoustic eigenmodes with a vortex sheet in a jet?" In *28th AIAA/CEAS Aeroacoustics 2022 Conference*, 2022, p. 3070.
- 8 M. Stavropoulos, M. Mancinelli, P. Jordan, V. Jaunet, D. M. Edgington-Mitchell, and P. Nogueira, "Analysis of axisymmetric screech tones in round twin-jets using linear stability theory," in *28th AIAA/CEAS Aeroacoustics 2022 Conference*, 2022, p. 3071.
- 9 M. Stavropoulos, M. Mancinelli, P. Jordan, V. Jaunet, D. M. Edgington-Mitchell, and P. Nogueira, "Understanding twin-jet screech using a vortex-sheet model," in *AIAA AVIATION 2021 FORUM*, 2021, p. 2249.
- 10 P. Nogueira, M. Mancinelli, V. Jaunet, D. Eysseric, P. Jordan, and D. Edgington-Mitchell, "The importance of the shock-cell structure in the a1 and a2 jet screeching modes," in *APS Division of Fluid Dynamics Meeting Abstracts*, 2020, E03–007.
- 11 V. Jaunet, M. Mancinelli, P. Jordan, *et al.*, "Dynamics of round jet impingement," in *25th AIAA/CEAS aeroacoustics conference*, 2019, p. 2769.
- 12 M. Mancinelli, V. Jaunet, P. Jordan, A. Towne, and S. Girard, "Reflection coefficients and screech-tone prediction in supersonic jets," in *25th AIAA/CEAS Aeroacoustics Conference*, 2019, p. 2522.
- 13 S. Meloni, A. Di Marco, R. Camussi, and M. Mancinelli, "Parametric characterization of wall pressure fluctuations induced by a compressible jet flow interacting with a flat plate," in *25th AIAA/CEAS Aeroacoustics Conference*, 2019, p. 2711.
- 14 M. Mancinelli and R. Camussi, "An experimental investigation of the wall pressure field induced by a low and moderate mach numbers jet on a tangential flat plate," in *2018 AIAA/CEAS Aeroacoustics Conference*, 2018, p. 3616.
- 15 M. Mancinelli, T. Pagliaroli, R. Camussi, and T. Castelain, "On the interpretation of pressure pod modes in the near field of a subsonic jet in terms of hydrodynamic and acoustic pressures," in *2018 AIAA/CEAS Aeroacoustics Conference*, 2018, p. 2979.
- 16 R. Camussi, M. Mancinelli, and D. M. A., "Application of time-frequency decompositions in jet aeroacoustics," in *AIMETA 2017 - Proceedings of the 23rd Conference of the Italian Association of Theoretical and Applied Mechanics*, 2017.
- 17 M. Mancinelli, A. Di Marco, and R. Camussi, "Cross-statistical and wavelet analysis of velocity and wall-pressure fields in jet-surface interaction," in *22nd AIAA/CEAS Aeroacoustics Conference*, 2016, p. 2861.

- 18 M. Mancinelli, T. Pagliaroli, A. Di Marco, R. Camussi, T. Castelain, and O. Leon, "Hydrodynamic and acoustic wavelet-based separation of the near-field pressure of a compressible jet," in *22nd AIAA/CEAS Aeroacoustics Conference*, 2016, p. 2864.
- 19 T. Pagliaroli, M. Mancinelli, R. Camussi, and G. Troiani, "Aeroacoustic study of a slotted burner," in *22nd AIAA/CEAS Aeroacoustics Conference*, 2016, p. 2829.

Teaching activity

- 2022 – Present
 - **Lecturer**, Thermofluid-dynamics of propulsive systems, M. Sc. in Aeronautical Engineering, Department of Civil Computer Science and Aeronautical Technologies Engineering, Università degli Studi Roma Tre, Rome, Italy.
 - **Lecturer**, Jet noise, Ph.D. in Methodologies and Models for Sustainable Engineering, Department of Civil Computer Science and Aeronautical Technologies Engineering, Università degli Studi Roma Tre, Rome, Italy.
 - **Co-supervisor**, 2 Ph.D. students, Department of Civil Computer Science and Aeronautical Technologies Engineering, Università degli Studi Roma Tre, Rome, Italy.
 - **Supervisor**, 2 B. Sc. students, Department of Civil Computer Science and Aeronautical Technologies Engineering, Università degli Studi Roma Tre, Rome, Italy.
- 2014 – Present
 - **Supervisor**, 9 M. Sc. students, Department of Civil Computer Science and Aeronautical Technologies Engineering, Università degli Studi Roma Tre, Rome, Italy.
 - **Co-supervisor**, 3 M. Sc. students, Department of Civil Computer Science and Aeronautical Technologies Engineering, Università degli Studi Roma Tre, Rome, Italy.
 - **Co-supervisor**, 11 B. Sc. students, Department of Civil Computer Science and Aeronautical Technologies Engineering, Università degli Studi Roma Tre, Rome, Italy.
- 2016 – 2017
 - **Assistant lecturer**, Laboratory of Aeronautics, B. Sc. in Mechanical and Industrial Engineering, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.
- 2014 – 2017
 - **Assistant lecturer**, Aerodynamics, M. Sc. in Aeronautical Engineering, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.
 - **Assistant lecturer**, Thermofluid-dynamics of propulsive systems, M. Sc. in Aeronautical Engineering, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.
 - **Assistant lecturer**, Laboratory of Aerodynamics and Aeroacoustics, M. Sc. in Aeronautical Engineering, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.

Miscellaneous Experience

Certifications



- 2021-Present
 - **Associate professor qualification (ASN, 09/A1)** Italy.
 - **Associate professor qualification**, France.

Work experience






- 2016
 - **Continuous and coordinated contractual relationship**, *Support to data analysis and writing of the final deliverable of FP7 EU project EASIER (JTICS-2013-02-GRA-05-008)*, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.
- 2015
 - **Continuous and coordinated contractual relationship**, *Support to the business management and scientific report write-up of FP7 EU project AEROTRANET2 (FP7-PEOPLE-2012-ITN)*, Department of Engineering, Università degli Studi Roma Tre, Rome, Italy.

Miscellaneous Experience (continued)



Awards and Achievements

- 2017  **Research fellowship**, Direction des Lanceurs, Centre National d'Études Spatiales, Paris, France.
- 2015  **Best Paper and presentation award**, EURONOISE Conference, European Acoustic Association, Maastricht, Netherlands, 2015.




International conference organisation and chairmanship

- 2024  **Chairperson and organiser**, SIG39 ERCOFTAC conference "Coherent structures in aeroacoustics", Rome, Italy
-  **Organisation committee**, 30th AIAA/CEAS Aeroacoustics Conference, Rome, Italy.
- 2023  **Chairman and organiser**, Jet-noise session, FORUM ACUSTICUM Conference, Turin, Italy.
- 2022  **Chairman**, Jet-noise session, 28th AIAA/CEAS Aeroacoustics Conference, Southampton, UK.
- 2019  **Chairman**, Jet-noise session, 25th AIAA/CEAS Aeroacoustics Conference, Delft, Netherlands.


Visiting researcher

- 2023  **Institut Pprime**, Poitiers, France.
-  **Von Karman Institute for Fluid Dynamics**, Bruxelles, Belgium.








Participation to EU research projects

- 2022-Present  **ENODISE**, Horizon 2020 grant agreement No. 860103.
- 2020-2023  **DJINN**, Horizon 2020 grant Agreement No. 861438.
- 2014-2017  **JERONIMO**, ACP2-GA-2012-314692.

Reviewing activity

- 2017-Present  **Reviewer**, Journal of Fluid Mechanics, European Journal of Mechanics B/Fluids, Physical Review Fluids, Physics of Fluids, Journal of Propulsion and Power, AIAA Journal, Experiments in Fluids, Flow Turbulence and Combustion.

Skills

- Languages  **Italian**, Mother tongue.
-  **English**, listening C1, reading C1, writing C1, spoken production C1, spoken interaction C1.
-  **French**, listening C1, reading C1, writing C1, spoken production C1, spoken interaction C1.
- Digital  Matlab, L^AT_EX, Microsoft Office.
- Driving license  B.
- Supervision  Co-supervisor of two Ph.D. students, supervisor of M.Sc. and B.Sc. students .
- Communication  Speaker/presenter to international conferences and EU project meetings.