

List of publications

Matteo Mancinelli

RTDa, Università degli Studi Roma Tre

Journal papers

1. **M. Mancinelli**, P. Jordan, and A. Lebedev, *Real-time estimation of jet-surface interaction noise*, Flow, Turbulence and Combustion, 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, 2023
3. M. N. Stavropoulos, **M. Mancinelli**, P. Jordan, V. Jaunet, J. Weightman, D. M. Edgington-Mitchell, P. A. S. Nogueira, *The axisymmetric screech tones of round twin jets examined via linear stability theory*, Journal of Fluid Mechanics, 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, 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, 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, 2021
7. **M. Mancinelli**, V. Jaunet, P. Jordan, A. Towne, *Screech-tone prediction using upstream-travelling jet modes*, Experiments in Fluids, 2019
8. **M. Mancinelli**, T. Pagliaroli, R. Camussi, T. Castelain, *On the hydrodynamic and acoustic nature of pressure POD modes in the near field of a compressible jet*, Journal of Fluid Mechanics, 2018
9. T. Pagliaroli, **M. Mancinelli**, G. Troiani, U. Iemma, R. Camussi, *Fourier and wavelet analyses of intermittent and resonant pressure components in a slot burner*, Journal of Sound and Vibration, 2018
10. **M. Mancinelli**, T. Pagliaroli, A. Di Marco, R. Camussi, T. Castelain, *Wavelet decomposition of hydrodynamic and acoustic pressures in the near field of the jet*, Journal of Fluid Mechanics, 2017

11. **M. Mancinelli**, A. Di Marco, R. Camussi, *Multi-variate and conditioned statistics of velocity and wall pressure fluctuations induced by a jet interacting with a flat-plate*, Journal of Fluid Mechanics, 2017
12. A. Di Marco, **M. Mancinelli**, R. Camussi, *Pressure and velocity measurements of an incompressible moderate Reynolds number jet interacting with a tangential flat plate*, Journal of Fluid Mechanics, 2015

Ph.D. thesis

- M. Mancinelli, *Experimental investigation of compressible and incompressible jet aeroacoustics in free and installed configurations through advanced time-frequency analysis*, Università degli Studi Roma Tre, 2017

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Elenco Pubblicazioni su Riviste Internazionali

- 1) Tinti, A.; Giacomello, A.; Grosu, Y.; Casciola, C. M. Intrusion and Extrusion of Water in Hydrophobic Nanopores. *Proc. Natl. Acad. Sci. U.S.A.* **2017**, *114* (48). <https://doi.org/10.1073/pnas.1714796114>.
- 2) Camisasca, G.; Tinti, A.; Giacomello, A. Gas-Induced Drying of Nanopores. *J. Phys. Chem. Lett.* **2020**, *11* (21), 9171–9177. <https://doi.org/10.1021/acs.jpcclett.0c02600>. [Autore co-primo, Corresponding Author]
- 3) Telari, E.; Tinti, A.; Giacomello, A. Intrinsic and Apparent Slip at Gas-Enriched Liquid–Liquid Interfaces: A Molecular Dynamics Study. *J. Fluid Mech.* **2022**, *938*, A35. <https://doi.org/10.1017/jfm.2022.162>.
- 4) Tinti, A.; Giacomello, A.; Casciola, C. M. Vapor Nucleation Paths in Lyophobic Nanopores. *Eur. Phys. J. E* **2018**, *41* (4), 52. <https://doi.org/10.1140/epje/i2018-11658-y>.
- 5) Tinti, A.; Camisasca, G.; Giacomello, A. Structure and Dynamics of Water Confined in Cylindrical Nanopores with Varying Hydrophobicity. *Phil. Trans. R. Soc. A.* **2021**, *370* (2208), 20200403. <https://doi.org/10.1098/rsta.2020.0403>. [Autore co-primo]
- 6) Tinti, A.; Giacomello, A.; Meloni, S.; Casciola, C. M. Classical Nucleation of Vapor between Hydrophobic Plates. *The Journal of Chemical Physics* **2023**, *158* (13), 134708. <https://doi.org/10.1063/5.0140736>. [Corresponding Author]
- 7) Le Donne, A.; Tinti, A.; Amayuelas, E.; Kashyap, H. K.; Camisasca, G.; Remsing, R. C.; Roth, R.; Grosu, Y.; Meloni, S. Intrusion and Extrusion of Liquids in Highly Confining Media: Bridging Fundamental Research to Applications. *Advances in Physics: X* **2022**, *7* (1), 2052353. <https://doi.org/10.1080/23746149.2022.2052353>.
- 8) Telari, E.; Tinti, A.; Settem, M.; Maragliano, L.; Ferrando, R.; Giacomello, A. Charting Nanocluster Structures via Convolutional Neural Networks. *ACS Nano* **2023**, *17* (21), 21287–21296. <https://doi.org/10.1021/acsnano.3c05653>. [Corresponding Author]
- 9) Silvestrini, M.; Tinti, A.; Giacomello, A.; Brito, C. Can One Predict a Drop Contact Angle? *Adv Materials Inter* **2021**, *8* (21), 2101005. <https://doi.org/10.1002/admi.202101005>.
- 10) Squarcini, A.; Tinti, A. Interfacially Adsorbed Bubbles Determine the Shape of Droplets. *SciPost Phys.* **2023**, *15* (4), 164. <https://doi.org/10.21468/SciPostPhys.15.4.164>. [Corresponding Author]
- 11) Squarcini, A.; Tinti, A. Correlations and Structure of Interfaces in the Ising Model: Theory and Numerics. *J. Stat. Mech.* **2021**, *2021* (8), 083209. <https://doi.org/10.1088/1742-5468/ac1407>. [Corresponding Author]
- 12) Squarcini, A.; Tinti, A. Droplet-Mediated Long-Range Interfacial Correlations. Exact Field Theory for Entropic Repulsion Effects. *J. High Energ. Phys.* **2023**, *2023* (3), 123. [https://doi.org/10.1007/JHEP03\(2023\)123](https://doi.org/10.1007/JHEP03(2023)123). [Corresponding Author]

Tesi di Dottorato

“Vapour Nucleation in Nanoscale Hydrophobic Confinement”. Tesi presentata per il conseguimento del titolo di Dottore di Ricerca in Meccanica Teorica e Applicata presso l’Università “La Sapienza” di Roma. Anno 2018, XXX Ciclo

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 in turbulent 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. Lemma, 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**, **TEX**, 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.

Antonio Tinti

Curriculum Vitae et Studiorum

impiego attuale

Ricercatore a Tempo Determinato (RTD-A) in Fluidodinamica (SSD ING-IND/06) presso il Dipartimento di Ingegneria Meccanica e Aerospaziale, Sapienza Università di Roma, Italy [02/2021 - data attuale]

abilitazioni professionali

Abilitazione Scientifica Nazionale alle funzione di professore universitario di seconda fascia nel settore concorsuale 09/A1

Abilitazione alla professione di Ingegnere Industriale (Esame di Stato)

incarichi

Membro del consiglio della scuola dottorale in Meccanica Teorica e Applicata, Sapienza Università di Roma (2023 - data attuale)

esperienza didattica

Docente del corso “**Termofluidodinamica Applicata**” 6 CFU, ING/IND-06 (Fluidodinamica). Corso di Laurea Magistrale in Ingegneria Meccanica, Sapienza Università di Roma. Anni accademici 2022/2023, 2023/2024

Docente del corso “**Aerodinamica del Veicolo**”. Modulo da 3CFU su 6CFU totali, ING/IND-06 (Fluidodinamica) . Corso di Laurea in Ingegneria Meccanica (LM-33), Sapienza Università di Roma Anno Accademico 2021/2022

Co-Supervisione di 3 studenti dottorali in Meccanica Teorica e Applicata

Relatore di una tesi di Laurea Magistrale e co-supervisione di 3 studenti di Laurea Magistrale

responsabilità scientifiche

Responsabile di unità e Co-PI del progetto PRIN 2022 “SoftNanoPores” finanziato dal MUR

impiego

Ricercatore a Tempo Determinato tipologia A (02/2021-Present). Dipartimento di Ingegneria Meccanica e Aerospaziale, Università La Sapienza di Roma.

Assegnista di Ricerca (4/2018-01/2021). Dipartimento di Ingegneria Meccanica e Aerospaziale, Università La Sapienza di Roma.

Promotionsstipendium presso il Dipartimento "Theory of Inhomogeneous Condensed Matter" diretto dal Prof. Dietrich (11/2017 - 03/2018). Max-Planck Institut für Intelligente Systeme, Stuttgart, Germany.

Dottorando, (11/2014-10/2017). Advisor: Prof. C.M. Casciola, Sapienza University of Rome.

Finanziamenti competitivi ottenuti

PRIN 2022 project "SoftNanoPores". Responsabile dell'unità presso Sapienza e Co-PI. Il progetto è stato finanziato dal MUR per un totale di 216k€, dei quali 96k€, assegnati alla unità di cui sono responsabile

Progetto Avvio alla Ricerca Sapienza 2018 Tipo 2, per assegnisti (PI), € 2k.

Progetto PRACE *VaPore* (PI) Grant Europeo per 25 milioni di ore computazionali su supercomputer Tier-0 (2019)

Progetto EuroHPC *ElectroHG* (CO-PI) Grant Europeo per 27 milioni di ore computazionali su supercomputer Tier-0 (2023)

ISCRA C CINECA (PI) grant italiano per 1M di ore computazionali su supercomputer.

ISCRA C CINECA (PI) grant italiano per 400k ore computazionali ibride (CPU/GPU) su supercomputer.

Istruzione

Dottorato di Ricerca in Meccanica Teorica e Applicata, Università La Sapienza di Roma, Tesi: *Vapour Nucleation in Nanoscale Hydrophobic Confinement*, Advisor: Prof. CM Casciola. Giudizio finale: *con lode*

Laurea Magistrale in Ingegneria Meccanica, Università La Sapienza di Roma, 110 e lode/110

Laurea in Ingegneria Meccanica, Università La Sapienza di Roma, Final Result: 110 e lode/110,

Diploma di Liceo Scientifico 100 e lode/100, Liceo Scientifico G. Galilei Civitavecchia (RM)

presentazioni orali su invito selezionate

Relazione su invito presso simposio CECAM "Fluids in porous materials: from fundamental physics to engineering applications" (2023)

Relazione su invito presso la conferenza PraceDays 2021, EuroHPC summit week.

Relazione su invito presso il Fields Workshop on Ion Transport and Nanofluidics: Modeling, Analysis and Numerics, Aug 2019, Fields Institute, Toronto

Relazione su invito presso il Max-Planck-Institut für Intelligente Systeme Department Dietrich, Stuttgart 2017

presentazioni orali selezionate

Presentazione presso il Workshop "Molecular Simulations in Engineering" 2023 (MolSimEng 2023) Ottobre 2023, Milano, Politecnico di Milano

Presentazione presso Frontiers in Ion Channels and Nanopores 2023 Conference (FICN 2023) Settembre 2023, Roma, Università "La Sapienza" di Roma

Presentazione presso European Fluid Mechanics Conference (EFMC14), Settembre 2022, Atene

Presentazione presso Italian Soft Days 2022 International Conference, Settembre 2022, Bari Politecnico di Bari

Presentazione presso APS March Meetings 2021 International Conference, Marzo 2021. Partecipazione remota.

Presentazione presso AIMETA 2019, Conferenza Internazionale della Associazione Italiana per la Meccanica Teorica e Applicata Settembre 2019, Università "La Sapienza" di Roma

Presentazione presso il Workshop MolSimEng 2018, Sept 2018, Politecnico di Milano

Presentazione presso la conferenza Cav 2018 Conference on Cavitation, Maggio 2018, Baltimore.

organizzazione di conferenze ed eventi

- Organizzatore: Frontiers in Ion channels and nanopores: theory, experiments, and simulation. Febbraio 2021, Sapienza Università di Roma (<https://sites.google.com/uniroma1.it/ficn2021/home>)

- Organizzatore locale: Frontiers in Ion channels and nanopores: theory, experiments, and simulation. Settembre 2023, Sapienza Università di Roma (<https://sites.google.com/uniroma1.it/ficn2023>)

altri riconoscimenti

Marie Skłodowska Curie Seal of Excellence (2023 MSCA PF Global)

attività di revisore

Revisore per numerose riviste internazionali tra cui: *Physical Review Letters*, *The Journal of Chemical Physics*, *Journal of Physical Chemistry*, *Physics of Fluids*, *Molecules*, *The International Journal of Heat and Mass Transfer*.

Revisore di progetti per assegnazione competitiva di risorse di ricerca:

- Revisore per varie edizioni dei grant: FCCN High Performance Computing projects (Call for Advanced Computing Projects, A2 and A3 accesses), organizzata dalla FCT Fundação para a Ciência e a Tecnologia, Fondazione del governo portoghese per la Scienza e la Tecnologia. Aree: Physics and Mathematics, Chemistry and Materials.

pubblicazioni su rivista

Intrusion and extrusion of water in hydrophobic nanopores

A. Tinti, A. Giacomello, Y. Grosu, C.M. Casciola (2017)

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Gas-induced drying of nanopores

G. Camisasca, A. Tinti, A. Giacomello (2020)

The Journal of Physical Chemistry Letters; doi:10.1021/acs.jpcllett.0c02600

Charting nanocluster structures via convolutional neural networks

E. Telari, A. Tinti, M. Settem, L. Maragliano, R. Ferrando, A. Giacomello

ACS Nano (2023); doi:10.1021/acsnano.3c05653

Grafting heterogeneities rule water intrusion and extrusion in nanopores

S. Cambiaso, F. Rasera, A. Tinti, D. Bochicchio, Y. Grosu, G. Rossi, A. Giacomello

(2024) accettato sulla rivista *Communications Materials*; disponibile come preprint arXiv: 2305.15250

Intrinsic and apparent slip at gas-enriched liquid-liquid interfaces: A molecular dynamics study;

E. Telari, A. Tinti, A. Giacomello (2022)

Journal of Fluid Mechanics; doi:10.1017/jfm.2022.162.

Intrusion and extrusion of liquids in highly confining media: bridging fundamental research to applications;

A. Le Donne, A. Tinti, E. Amayuelas, H.K. Kashyap, G. Camisasca, R. C. Remsing, R. Roth, Y. Grosu, S. Meloni. (2022)

Advances in Physics X; doi:10.1080/23746149.2022.2052353

Classical nucleation of vapor between hydrophobic plates;

A. Tinti, A. Giacomello, S. Meloni, C.M. Casciola (2023)

The Journal of Chemical Physics; doi:10.1063/5.0140736.

Vapor nucleation paths in lyophobic nanopores

A. Tinti, A. Giacomello, C.M. Casciola (2018)

The European Physical Journal E; doi:10.1140/epje/i2018-11658-y

Structure and dynamics of water confined in cylindrical nanopores with varying hydrophobicity

A. Tinti, G. Camisasca, A. Giacomello (2021)

Philosophical Transactions of the Royal Society A; doi:10.1098/rsta.2020.0403

Can one predict a drop contact angle?

M.L. Silvestrini, A. Tinti, C. Brito, A. Giacomello (2021)

Advanced Materials Interfaces; doi:10.1002/admi.202101005

Droplet-mediated long-range interfacial correlations Exact field theory for entropic repulsion effects

A. Squarcini, A. Tinti (2023)

Journal of High Energy Physics; doi:10.1007/JHEP03(2023)123

Shape and interfacial structure of droplets. Exact results and simulations

A. Squarcini, A. Tinti (2023)

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A Squarcini, A Tinti (2023)

SciPost Physics; doi:10.21468/SciPostPhys.15.4.164

Correlations and structure of interfaces in the Ising model: theory and numerics

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Journal of Statistical Mechanics: Theory and Experiment; doi:10.1088/1742-5468/ac1407

Four-point interfacial correlation functions in two dimensions. Exact results from field theory and numerical simulations

A Squarcini, A Tinti (2021)

Journal of Statistical Mechanics: Theory and Experiment doi:10.1088/1742-5468/ac257c

Conoscenza Lingue

Lingua Italiana: Madrelingua

Lingua Inglese: Conoscenza Avanzata (Scrittura testi specialistici, didattica, relazioni a convegni internazionali)

Lingua Francese: Conoscenza di Base (Lettura testi specialistici)