

PERSONAL INFORMATION

Marco Pizzoli✉ marco.pizzoli@uniroma1.itCURRENT POSITION **Postdoctoral fellow at Sapienza University of Rome**

RESEARCH ACTIVITY

Main research interests

- Sloshing effects on aeroelastic stability and response.
- Deep learning for nonlinear system identification.
- Fluid-structure interaction problems.

November 2022 – Current **Postdoctoral fellow**

Sapienza University of Rome, Department of Mechanical and Aerospace Engineering, via Eudossiana, 18, Rome, Italy

Research Topic *Nonlinear Reduced-order models of sloshing in aeronautical fuel tanks for the aeroelastic response of next-generation aircraft*

Research Funder European project H2020 SLOWD (SLOshing Wing Dynamics) led by AIRBUS Operations

EDUCATION AND TRAINING

November 2019 – January 2023 **Ph.D in Aeronautics and Space Engineering**

Sapienza University of Rome, Department of Mechanical and Aerospace Engineering, via Eudossiana, 18, Rome, Italy

Thesis Experimental assessment and reduced order modeling of nonlinear vertical sloshing for aeroelastic analyses

Research Topic Investigation of fuel-sloshing dynamics in wing tanks and its effects on the global aeroelastic response of aircraft

Research Funder European project H2020 SLOWD (SLOshing Wing Dynamics) led by AIRBUS Operations

Visiting mar. 2022 - jul. 2022 Visiting scholar at University of Washington, Seattle, WA, USA, Applied Mathematics Department (Supervisor Prof. Nathan J. Kutz)

October 2016 – October 2019 **MASTER DEGREE in Aeronautical Engineering**

Sapienza University of Rome, Piazzale Aldo Moro, 5, Rome, Italy

Graduation Note: 110/110

Thesis *Investigations of sloshing-tank effects on integrated aircraft modelling of aeroelasticity and flight dynamics* (Supervisor: Prof. Franco Mastroddi)

Honors

- Among the winners of the AIAA-PEGASUS 2020 student conference (2nd ex-aequo position)
- Paper submitted to the AIAA-PEGASUS 2020 student conference selected for the publication on the Journal of Aerospace Science, Technologies & Systems

October 2011 – March 2016 **BACHELOR DEGREE in Aerospace Engineering**

Sapienza University of Rome, Piazzale Aldo Moro, 5, Rome, Italy

Graduation Note: 106/110

Thesis *Semi-analytical modeling of high-speed impacts on fiberglass laminates* (Supervisor: Prof. Paolo Gaudenzi)

September 2006 – July 2011 **High School Diploma**

L.S.S. Giovanni Vailati, Via Achille Grandi, 146, Genzano di Roma (RM)

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	B2	B2

Computer skills

- competent with most Microsoft Office programmes and $\text{\LaTeX}$
- basic knowledge of Python, Pytorch, Tensorflow, Fortran and Wolfram Mathematica
- good knowledge of Matlab & Simulink
- good knowledge of FEM software MSC Nastran & MSC Patran

Driving licence B

ADDITIONAL INFORMATION

Tutoring activities

- Tutor of the course *Costruzioni Aerospaziali* (Aerospace Structures) of the Bachelor Degree in Aerospace Engineering at Sapienza University of Rome (academic year 2020-21).
- Tutor of the course *Costruzioni Aerospaziali* (Aerospace Structures) of the Bachelor Degree in Aerospace Engineering at Sapienza University of Rome (academic year 2021-22).

- Publications**
- Pizzoli, M., (2020). Investigation of sloshing effects on flexible aircraft stability and response. *Aerotecnica Missili & Spazio* vol. 99, pages 297–308
 - Colella, M., Saltari, F., Pizzoli, M. & Mastroddi, F. (2021). Sloshing reduced-order models for aeroelastic analyses of innovative aircraft configurations. *Aerospace Science & Technology*, 118, 107075.
 - Pizzoli, M., Saltari, F., Mastroddi, F., Martínez-Carrascal, J. & González-Gutiérrez, L. M. (2022). Nonlinear reduced order model for vertical sloshing by employing neural networks. *Nonlinear dynamics*, 107(2), pp. 1469–1478
 - Pizzoli, M., Saltari, F., Coppotelli, G., & Mastroddi, F. (2022). Experimental Validation of Neural-Network-Based Nonlinear Reduced-Order Model for Vertical Sloshing. *AIAA Science and Technology Forum and Exposition, AIAA SciTech Forum 2022*, AIAA 2022-1186
 - Saltari, F., Pizzoli, M., Mastroddi, F., Gambioli, F. & Jetzschmann, C. (2022). Nonlinear sloshing integrated aeroelastic analyses of a research wing prototype. *AIAA Science and Technology Forum and Exposition, AIAA SciTech Forum 2022*, AIAA 2022-1187
 - Saltari, F., Pizzoli, M., Coppotelli, G., Gambioli, F., Cooper, J.E. & Mastroddi, F. (2022). Experimental characterisation of sloshing tank dissipative behaviour in vertical harmonic excitation. *Journal of Fluids and Structures*, 109, 103478
 - Saltari, F., Pizzoli, M., Gambioli, F., Jetzschmann, C. & Mastroddi, F. (2022). Sloshing reduced-order model based on neural networks for aeroelastic analyses. *Aerospace Science and Technology*, 127, 107708
 - Pizzoli, M., Saltari, F. & Mastroddi, F. (2022). Linear and Nonlinear Reduced Order Models for Sloshing for Aeroelastic Stability and Response Predictions. *Applied Sciences*, 12(17):8762
 - Saltari, F., De Courcy, J., Pizzoli, M., Constantin, L., Mastroddi, F., Coppotelli, G., et al. (2022). Data driven and model-based vertical sloshing reduced order models for aeroelastic analysis. *IFASD 2022*, Madrid, Spain
 - Martínez-Carrascal, J., Constantin, L., Pizzoli, M., González-Gutiérrez, L. M., Titurus, B., Cooper, J.E. & Coppotelli, G (2022). Overview of Single Degree of Freedom Experiments of vertical sloshing flows inside scaled tanks. *IFASD 2022*, Madrid, Spain
 - Pizzoli, M., Martínez-Carrascal, J., Saltari, F., González-Gutiérrez, L. M. & Mastroddi, F. (2022). Neural-network-based reduced-order model for vertical sloshing for FSI simulations. *9th International Conference on Hydroelasticity in Marine Technology*, Rome, Italy
 - Pizzoli, M., Saltari, F., Coppotelli, G., & Mastroddi, F. (2023). Study of geometrical effects on slosh induced damping, *AIAA Science and Technology Forum and Exposition, AIAA SciTech Forum 2023*
 - Pizzoli, M., Saltari, F., Coppotelli, G., & Mastroddi, F. (2023). Neural-network-based reduced order modeling for nonlinear vertical sloshing with experimental validation, *Nonlinear Dynamics*, 111, 8913–8933.
 - Martinez-Carrascal, J., Pizzoli, M., Saltari, F., Mastroddi, F. & Gonzalez-Gutierrez, L.M. (2023). Sloshing reduced-order model trained with Smoothed Particle Hydrodynamics simulations, *Nonlinear Dynamics*.