CURRICULUM VITAE
Giacomo Della Posta

Part I – General Information

Full Name	Giacomo Della Posta
E-mail	giacomo.dellaposta@uniroma1.it
Spoken Languages	Italian, English (C2 - Grade A, CAE certificate)

Part II – Education

Type	Year	Institution	Notes
PhD	2022	Sapienza University of Rome	PhD in Theoretical and Applied Mechanics. Development of a novel high-fidelity two-way coupling model for Fluid-Structure Interaction in Wind Energy. In collaboration with the University of Texas at Dallas. 23/05/2022. Supervisors: prof. M. Bernardini, prof. S. Leonardi
Post-graduate training	2022	S.G.I. CFD Summer School	Summer School on Computational Fluid Dynamics & SuperComputing
Post-graduate training	2019	CINECA	Summer School on Parallel Computing
Post-graduate training	2018	CINECA	HPC methods for Computational Fluid Dynamics and Astrophysics
Post-graduate training	2018	CINECA	Debugging and Optimization of Scientific Applications
Post-graduate training	2018	CINECA	Introduction to modern Fortran
Pre-doctorate training	2018	Institut für Strömungsmechanik und Technische Akustik, Technische Universität Berlin	Research Trainee (Erasmus+ Traineeship program), 3 months. Supervisor: prof. J. Sesterhenn
Pre-doctorate training	2018	Sapienza University of Rome	Research scholarship. “Implementazione di schemi shock-capturing in un solutore fluidodinamico comprimibile”, 6 months.
University graduation	2018	Sapienza University of Rome	Master’s Degree in Aeronautical Engineering (110 e lode/110). 25/01/2018. Thesis: Detached-Eddy Simulation of Shock Wake/Boundary-Layer Interactions in a Planar Transonic Nozzle. Supervisor: prof. M. Bernardini
University graduation	2015	Sapienza University of Rome	Batchelor’s Degree in Aerospace Engineering (110 e lode/110). 15/07/2015. Thesis: L'ala a box: un primo studio aerodinamico. Supervisor: prof. G. Graziani.

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
01/02/22	31/01/23	Sapienza University of Rome	Assegnista di ricerca. Development of a multi-species reacting flow solver for the simulation of H_2 flames. SD ING-IND/06. Scientific supervisor: prof. M. Bernardini.

01/04/19	30/06/19	The University of Texas at Dallas	Short-term scholar. Visiting scholar in Mechanical Engineering housed with the Department of Mechanical Engineering

IIIB – Other Appointments

Start	End	Institution	Position
08/11/22	07/01/23	Sapienza University of Rome	Lavoratore autonomo. "Supporto alla gestione e alle attività di post-processing di un database numerico per lo studio del comportamento di propellenti criogenici in serbatoi"
20/11/19	21/12/19	Sapienza University of Rome	Lavoratore autonomo. "Post-processing di un database numerico per lo studio di uno strato limite separato"

Part IV – Teaching experience

Year	Institution	Lecture/Course
2020	Sapienza University of Rome	Tutor of the course "Compressible Flows" (first semester, in English), Master's Degree in Space and Astronautical Engineering. Supervisor: prof. F. Stella. A.Y. 2020/2021
2019	GAUSS Srl	Lessons of Aerodynamics and fundamentals of Computational Fluid Dynamics for graduate students (26/11/19-06/12/19)
2019	Sapienza University of Rome	Tutor of the course "Compressible Flows" (first semester, in English), Master's Degree in Space and Astronautical Engineering. Supervisor: prof. F. Stella. A.Y. 2019/2020
2018	Sapienza University of Rome	University teaching assistant of the course "Analisi Matematica I" (first semester, in Italian). Supplementary Calculus tutoring to reduce dropouts and delays of freshmen of bachelor's degree in Aerospace Engineering. Supervisor: prof. A. Dall'Aglio. A.Y. 2018/2019.
2018	Sapienza University of Rome	Tutor of the course "Compressible Flows" (first semester, in English), Master's Degree in Space and Astronautical Engineering. Supervisor: prof. F. Stella. A.Y. 2018/2019

Part V - Society memberships, Awards and Honors

Year	Title
2012-present	Alumnus of the University College of Merit "Villa Nazareth" and member of "Associazione Comunità Domenico Tardini". University Colleges of Merit are a small number of organisations recognised by the Italian Ministry of Education, University and Research that sustain and extend the education of students who demonstrate remarkable skills and commitment and have achieved significant results. Specifically, "Villa Nazareth" is a College of Merit in Rome that helps particularly worthy students belonging to families in need.
2022	2022 APS/DFD Gallery of Fluid Motion Award - F. Salvadore, A. Memmolo, D. Modesti, G. Della Posta, M. Bernardini, Direct numerical simulation of a micro-ramp in a high-Reynolds number supersonic turbulent boundary layer.
2019	Scholarship "Ing. Vittorino e Dr.ssa Zita Pollo", Fondazione Agnelli. Scholarship for post-lauream studies in STEM subjects. Scholarship value: 6.000 €.
2019 2016 2014	Sergio Marchionne Student Achievement Award for master's degree (2019), bachelor's degree (2016), and high school diploma (2014), Fiat Chrysler Automobiles. The Sergio Marchionne

	Student Achievement Awards is a global recognition program offered to children of the FCA group employees in 18 countries worldwide.
2018	"Laureato Eccellente" for the Faculty of Industrial and Civil Engineering. Sapienza University of Rome, Roma Sapienza Foundation. Awarded as one of the best 400 students to graduate in the academic year 2016/2017 from Sapienza University of Rome.
2018 2015	Excellence path (bachelor's and master's degree), Department of Mechanical and Aerospace Engineering, Sapienza University of Rome. Training enhancement and scholarship for worthy students.

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value	PI/I
2022	Next Generation Space Propulsion Design	Progetti di Ricerca, Progetti Medi, Sapienza University of Rome.	12.000 €	I
2022	Numerical assessment of different nonlinear structural models for the study of the aeroelastic response of large-scale wind turbines in a CFD-CSD framework.	Fondi di Avvio alla Ricerca, Sapienza University of Rome.	2.664 €	PI
2020	Large-eddy simulations of fluid-structure interaction in wind energy.	Fondi di Avvio alla Ricerca, Sapienza University of Rome.	1.000 €	PI

Part VII – Research Activities

Keywords	Brief Description
Computational Fluid Dynamics High-speed flows Shock wave/boundary layer interaction (SBLI) Aeroacoustics Fluid-Structure Interaction	The focus of my research is the simulation by means of high-fidelity methodologies of fluid flows in different regimes on HPC infrastructures. During my PhD, I developed a Fluid-Structure Interaction model based on Large Eddy Simulations to study utility-scale wind turbines. In the last year, instead, I had the opportunity to study high-speed flows in the aerospace field. Practical applications considered in my recent research activity include the aeroacoustics of a space launcher at lift-off, the characterisation of the unsteadiness of a SBLI simulated by Direct Numerical Simulation (DNS) at computationally high Reynolds number, and the numerical simulation of the flow generated by microramps for SBLI control. Finally, I contributed to the development of a multispecies flow solver.

Part VIII – Summary of Scientific Achievements

Product type	Number	Database	Start	End
Peer-reviewed journal papers	4 (+1 in press)	Scopus	2018	2023
Conference papers	2	Scopus	2018	2023

Total Impact factor	21.666 (including in press peer-reviewed journal papers)
Average impact factor per Product	4.333 (including in press peer-reviewed journal papers)
Total Citations	6
Average Citations per Product	1.5 (only journal papers, excluding in press products)
Hirsch (H) index	2
Normalized H index* (H index divided by academic seniority)	0.5 (4 years from Master's graduation) 2.0 (1 year from PhD graduation)

Part IX–Conferences, Symposia, Workshops, Etc.

Year	Conference	Presentation Title
2022	14th European Fluid Mechanics Conference, Athens	Effects of an Unsteady Aerodynamics Model in a High-Fidelity Fluid-Structure Interaction Solver for Horizontal Axis Wind Turbines (presenting author)
2022	33rd Parallel CFD International Conference, Alba	High-fidelity simulation of the aeroacoustics at lift-off of a space launcher (presenting author)
2021	14th European Conference on Turbomachinery Fluid Dynamics and Thermodynamics, Gdańsk (online)	A Novel Two-Way Coupling Method for the Study of the Aeroelasticity of Wind Turbines in a Large-Eddy Simulation Framework (presenting author)
2018	9th International Symposium on Turbulent Heat and Mass Transfer, Rio de Janeiro	Enhanced Delayed DES of shock wave/boundary layer interaction in a planar transonic nozzle
2018	12th European Fluid Mechanics Conference, Vienna	Effects of the interface dynamics on turbulent drag reduction over superhydrophobic and liquid infused surfaces

Part X – Complete List of Publications

1. High-Fidelity Simulations of the Aeroacoustic Environment of the VEGA Launch Vehicle at Lift-Off (2023). **Della Posta, G.**, Martelli, E., Stella, F., Barbagallo, D., Neri, A., Salvadore, F., Bernardini, M. Computer and Fluids (IF 3.077 (2021), Q1 in Computer Science (miscellaneous)). ***Under review*.**
2. Unsteadiness characterisation of shock wave/turbulent boundary-layer interaction at moderate Reynolds number (2023). Bernardini, M., **Della Posta, G.**, Salvadore, F., Martelli, E., Journal of Fluid Mechanics (IF 4.245 (2021), Q1 in Condensed Matter Physics). 954, A43.
3. STREAmS-2.0: Supersonic turbulent accelerated Navier-Stokes solver version 2.0 (2023). Bernardini, M., Modesti, D., Sathyanarayana, S., **Della Posta, G.**, Pirozzoli, S. Computer Physics Communications (IF 4.717 (2021), Q1 in Hardware and Architecture). 285, 108644.
4. High-fidelity simulation of the aeroacoustics at lift-off of a space launcher (2022). **Della Posta, G.**, Martelli, E., Stella, F., Barbagallo, D., Neri, A., Bernardini, M. Proceedinds of 33rd International Conference on Parallel Computational Fluid Dynamics, May 25-27, 2022, Alba, Italy, pp.1-12.
5. Large eddy simulations of a utility-scale horizontal axis wind turbine including unsteady aerodynamics and fluid-structure interaction modelling (2022). **Della Posta, G.**, Leonardi, S., Bernardini, M., Wind Energy (IF 3.710 (2021), Q2 in Renewable Energy, Sustainability and the Environment), 26(1), pp. 98-125.
6. A two-way coupling method for the study of aeroelastic effects in large wind turbines (2022). **Della Posta, G.**, Leonardi, S., Bernardini, M., Renewable Energy (IF 8.634 (2021), Q1 in Renewable Energy, Sustainability and the Environment), 190, pp. 971-992.
7. A Novel Two-Way Coupling Method for the Study of the Aeroelasticity of Wind Turbines in a Large-Eddy Simulation Framework (2021). **Della Posta, G.**, Ciri, U., Leonardi, S., Bernardini, M., Proceedinds of 14th European Conference on Turbomachinery Fluid dynamics & Thermodynamics, April 12-16, 2021, Gdansk, Poland, pp.1-4.
8. Enhanced delayed DES of shock wave/boundary layer interaction in a planar transonic nozzle (2019). **Della Posta, G.**, Martelli, E., Ciottoli, P.P., Stella, F., Bernardini, M., International Journal of Heat and Fluid Flow (IF 2.000 (2019), Q1 in Condensed Matter Physics)., 77, pp. 359-365.

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Rome, 17/01/2023