

Marco Fratini

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in Marco Fratini



Education

- 2023 – ongoing **PhD student in Aeronautical and Space Engineering**, Università La Sapienza di Roma.
- 2020 – 2023 **MS in Aeronautical Engineering**, Università La Sapienza di Roma.
Thesis title: *Numerical investigation on space launchers aerodynamics using RANS models*.
Exams list: Gasdynamics, Control systems, Air traffic control, Flight dynamics, Aeronautical structures, Aeronautical engines, Computational aerodynamics, Aeroelasticity, Experimental aerodynamics, Aircraft and helicopter aerodynamics, Non linear analysis of structures, Aircraft guidance and navigation, Hypersonics.
Degree mark: 110/110 with Honors.
Thesis defended on 16/03/2023.
- 2017 – 2020 **BS in Aerospace Engineering**, Università La Sapienza di Roma.
Thesis title: *Ground effect aerodynamics*.
Exams list: Calculus, Physics, Chemistry, Thermodynamics, Aerodynamics, Applied mechanics, Structural mechanics, Electrotechnics, Materials science, Aerospace propulsion, Numerical methods, Flight mechanics, Aerospace structures, Aerospace telecommunications, Aeronautical systems, Aeronautical propulsion systems.
Degree mark: 110/110 with Honors.
Thesis defended on 23/10/2020.
- 2012 – 2017 **Italian secondary school diploma, Liceo Lazzaro Spallanzani di Tivoli**, Scientific certificate

Scholarships and post-graduate research

- March 2023 – April 2023 **Post-graduate research at Università La Sapienza di Roma**, with scholarship "*Supporting the implementation of LES/DES models in a solver for multispecies compressible flows*".
- June 2023 – October 2023 **Post-graduate research at Università degli Studi Roma Tre**, with scholarship "*Support for the analysis of aerodynamic and aeroacoustic data obtained in wind tunnel*".
- 2023 – ongoing **Collaboration at Università La Sapienza di Roma**, Dipartimento di Ingegneria Meccanica ed Aerospaziale: research activity on space launchers aerodynamics and fluid-dynamics of liquid rocket engines.

Publications

Journal papers

- Della Posta, G., Fratini, M., Salvatore, F., Bernardini, M., "Direct numerical simulation of supersonic boundary layers over a microramp: effect of the Mach number (2023)", *AIAA Journal* (IF 3.010 (2023), Q1 in Aerospace Engineering). <https://doi.org/10.2514/1.J063363>

Conference papers

- Della Posta, G., Fratini, M., Salvatore, F., Bernardini, M., "A DNS study on the Mach number effect for a supersonic microramp (2023)", *57th 3AF International Conference on Applied Aerodynamics*.

Skills

Languages	■ Good reading, writing and speaking competencies for English. Native proficiency in Italian
Coding	■ MATLAB, Wolfram Mathematica, \LaTeX , Fortran, Python
Softwares	■ CFD++ (advanced), ANSYS Fluent (advanced), OpenFOAM (base), ANSYS Fluent meshing (advanced), ANSYS SpaceClaim (advanced), TECPLOT (advanced), ANSA (intermediate), PointWise (base), MATLAB and SIMULINK (advanced), Wolfram Mathematica (intermediate), XFLR5 (advanced), modeFrontier (base), NASTRAN and PATRAN (intermediate), ADAMS (base)
Office automation	■ Microsoft office (advanced)
Operating systems	■ Windows (advanced), MacOS (advanced), Linux (intermediate)

Trainings

- 2021 ■ Basic introduction course to ANSA BETA CAE
- 2023 ■ Python language introduction course

Certificates

- 2017 ■ Standard ECDL
- 2022 ■ BETA CAE: Basic introduction to ANSA for CFD and FEM. Certificate No. 392022050911