europass Curriculum vitae

PERSONAL INFORMATION

# Marta Colella

## WORK EXPERIENCE

March 2023 – September 2023

### Internship at AIRBUS OPERATIONS SAS

Loads and Aeroelasticity department in Toulouse, FR

Activities: Implemented an innovative Multidisciplinary Optimization framework to enable the design of more fuel efficient aircraft. The methodology was successfully tested using industry standard data and model.

## TEACHING ASSISTANCE

March 2022 – April 2023

### Aerospace Structures and Aeronautical Structures

Sapienza University of Rome, Rome, IT

Tutoring activities involve assisting students with course materials and exercises, following them through the course's activities.

## EDUCATION

November 2020 – May 2024

### Ph.D. fellowship in Aeronautics and Space Engineering

Sapienza University of Rome, Rome, IT

Dissertation: Integrated Aeroservoelastic Modeling for Preliminary Aircraft Design with Multi-Objective Optimization. (Supervisor Prof. Franco Mastroddi, Co-Advisor Fabio Vetrano PhD)

Research interests: Multidisciplinary and Multi-Objective Optimisation to design innovative and fuel-efficient aircraft (e.g. aircraft with semi-aeroelastic hinges and aircraft using hydrogen). Usage of integrated reduced-order models of aeroelasticity, flight dynamics and control systems. Use of control laws for manoeuvrability, gust load alleviation and aircraft stability. Impact of sloshing on stability and aeroelastic response.

October 2017 – May 2020

### Master Degree in Aeronautical Engineering

Sapienza University of Rome, Rome, IT

Thesis: Linearized sloshing modelling with membrane-containment system for FSI applications. (Supervisor Prof. Franco Mastroddi)
Graduation note: 110/110
The master thesis was framed within the Airbus-led H2020 project *SLOWD*.

2018 – 2019

### Sapienza Flight Team project

Sapienza University of Rome, Rome, IT

Participation in Student Unmanned Aerial Systems (SUAS) Competition
(https://suas-competition.org)
St. Mary's County Regional Airport (2W6) in St. Mary's County, Maryland.

Role: Aicraft design group member
I led a team of six people. We worked together on the challenges of the project and the most appropriate design choices, also in relation to the budget available.

October 2014 – November 2017

## Bachelor Degree in Aerospace Engineering

Sapienza University of Rome, Rome, IT

Thesis: An analysis of the performance of ducted propellers for vertical take-off aircraft. (Supervisor Prof. Luca Marino)
Graduation note: 110/110 cum laude.

## CONFERENCE ATTENDANCE

13-17 June 2022

### International Forum on Aeroelasticity and Structural Dynamics IFASD

Madrid, Spain, ES

Article presented: M. Colella, F. Saltari, F. Mastroddi, F. Vetrano, "Multi-Disciplinary Optimization for an Aeroservoelastic simplified model"

## PERSONAL SKILLS

Mother tongue: Italian

Other languages

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---|---|---|---|---|---|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | B2 | C1 | B2 | B2 | C1 |
| French | B1 | B1 | A2 | A2 | A2 |

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

## COMPUTER SKILLS

- Competent with most Microsoft Office programs
- Programming competence: Matlab, Mathematica
- Simulators: ModeFrontier, MSC Nastran, MSC Patran ,Simulink, Ansa, Fluent, CFD++, AVL, Gemseo, OpenMDAO

## INTERESTS

Volunteering: Recovery of food and clothing for reception centres, italian lessons for foreign children.

Dance: I enjoy classical, modern and contemporary dance and regularly participate in dance events.

Travel: Enjoy the experience of different cultures and see the beauty of the world.

Readings: Passion for motivational reading and mental wellness, positive thinking and self-improvement.

## SELECTED PUBLICATIONS

[1] Marta Colella, Francesco Saltari, Marco Pizzoli, and Franco Mastroddi. “Sloshing reduced-order models for aeroelastic analyses of innovative aircraft configurations”. In: *Aerospace Science and Technology* 118 (2021), p. 107075.

[2] Marta Colella, Francesco Saltari, Franco Mastroddi, Fabio Vetrano, et al. “Multi-disciplinary optimization for an aeroservoelastic simplified model”. In: *International Forum on Aeroelasticity and Structural Dynamics, IFASD 2022*. 2022.

[3] Marta Colella, Mario Peinado Garcıa, Francesco Saltari, Franco Mastroddi, Fabio Vetrano, Paolo Mastracci, and Andrea Castrichini. “Multidisciplinary design optimisation of an aircraft with the semi-aeroelastic hinge device”. In: *International Forum on Aeroelasticity and Structural Dynamics, IFASD 2024*. 2024.