europass Curriculum vitae

PERSONAL INFORMATION Gianluca Cocirla

EXPERIENCES AND PROJECTS

February 2022 – November 2023

Postgraduate Fellowship

Centro Ricerca Aerospaziale Sapienza (CRAS) of La Sapienza, University of Rome

Postgraduate Fellowship focused on advanced statistical Eulerian multiphase modelling for Solid Rocket Motors for the VEGA launcher's performance evaluation.

February 2019 – December 2019

Sapienza Team Leader

MARGE – Melanoma Apoptosis Reduced Gravity Experiment

Team leader of the Sapienza student group for the 6th Mission Idea Contest (MIC).

- Organized, coordinated and supervised the team work.
- Conducted weekly team meetings and developed and implemented strategies and plans.
- Collaborated with the Laboratory of Cutaneous Physiopathology of the San Gallicano Dermatological Institute IRCCS.

EDUCATION AND TRAINING

November 2023 - Present

PhD in Aeronautical and Space Engineering

La Sapienza, University of Rome

- Analysis, validation and application of Lagrangian and Eulerian multiphase CFD numerical tools for space propulsion flows.
- Multiphase and multidimensional effect on solid rocket motors performance, wall heat flux, thermochemical and mechanical nozzle erosion.
- Liquid rocket engine heat load management through thrust chamber active cooling techniques such as gaseous and/or liquid film cooling and mixture ratio bias.

September 2019 – January 2022

Master's Degree in Space and Astronautics Engineering

La Sapienza, University of Rome

Eulerian Modelling of Multiphase Flows in Solid Rocket Motors

110 with honors/110

September 2016 – July 2019

Bachelor's Degree in Aerospace Engineering

La Sapienza, University of Rome

Progetto e analisi di un sounding rocket basato su sistemi di propulsione ibridi

110 with honors/110

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PERSONAL SKILLS AND COMPETENCES

Mother tongue: Italian

Other languages: English (Proficient)
Romanian (Basic)

Personal skills and competences
- Excellent ability to work both in team and alone. Skills improved thanks to work and projects activities carried out at university.
- Attitude to punctuality and strong organizational skills acquired by managing daily activities during the years of studies and projects.
- Quick learner in new environments and good response to stressful situations.
- Highly motivated, strongly determined, perseverant, curious and competitive.

Technical skills and competences
- Microsoft Windows and Linux OS user.
- Very good knowledge of MATLAB and FORTRAN programming languages.
- Basic knowledge of PYTHON programming language.
- Good knowledge of TECPLOT post-processing software.
- Excellent knowledge of NASA Chemical Equilibrium with Applications CEA software.

PUBLICATIONS

G. Cocirla, M. Grossi, D. Bianchi, B. Favini. *Three Dimensional and Multiphase Simulations of Aft Finocyl Solid Rocket Motors*. 9th Space Propulsion Conference, Glasgow, Scotland, 2024.

G. Cocirla, M. Grossi, M.T. Migliorino, D. Bianchi, F. Nasuti. *Modeling and Analysis of Film Cooling in Oxygen-Kerosene Rocket Thrust Chambers*. AIAA SciTech Forum, Orlando, Florida, 2024.

M. T. Migliorino, **G. Cocirla**, M. Fabiani, M. Grossi, D. Bianchi, F. Nasuti. *Convective and Radiative Wall Heat Transfer Evaluation in Film-Cooled Liquid Rocket Thrust Chambers*. 74th International Astronautical Congress (IAC), Baku, Azerbaijan, 2023.

F. Nasuti, D. Bianchi, M. T. Migliorino, M. Grossi, M. Fiore, M. Rotondi, P. M. Zolla, B. Latini, M. Fabiani, **G. Cocirla**, A. Sereno, A. Montanari, V. Barbato. *T(H)RUST: applied research activities on liquid rocket propulsion at Sapienza University of Rome*. 74th International Astronautical Congress (IAC), Baku, Azerbaijan, 2023.

M. Grossi, **G. Cocirla**, A. Sereno, D. Bianchi, B. Favini. *Multiphase and Multidimensional Effects on Solid Rocket Nozzle Performance*. 10th European Conference for Aeronautics and Space Sciences, Lausanne, Switzerland, 2023.

G. Cocirla, M. Grossi, M.T. Migliorino, D. Bianchi and F. Nasuti. *Simplified Numerical Modeling of Film Cooling and Mixture Ratio Bias in Liquid Rocket Thrust Chambers*. **Presented** at 10th European Conference for Aeronautics and Space Sciences, Lausanne, Switzerland, 2023.

M. Grossi, **G. Cocirla**, D. Bianchi, B. Favini. *Solid Rocket Motor Internal Ballistics Simulation Using Eulerian Multiphase Models*. **Presented** at the 9th European Conference for Aeronautics and Space Sciences, Lille, France, 2022.

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E. Vestito, M.G. Pancalli, G. Bagolan, **G. Cocirla**, F. Del Prete, A. Fabbrizi, P. Federici, E. Neri, A. Piergiacomo, M. Renda, F. Curianò, P. Marzioli, B. Bellei, D. Kovacs, M. Picardo, F. Santoni. *Experimental investigation on the effect of microgravity and immunotherapy in melanoma cells: MARGE experiment*. 71st International Astronautical Congress (IAC), CyberSpace edition, 2020.

G. Cocirla, G. Bagolan, F. Calidori, E. Colonna, F. Del Prete, A. Fabbrizi, P. Federici, R. Horshkov, P. Marzioli, E. Neri, M.G. Pancalli, A. Piergiacomo, M. Renda, E. Vestito. *MARGE – Melanoma Apoptosis Reduced Gravity Experiment*. **Presented** at the 6th Mission Idea Contest (MIC) for Achieving Sustainable Development Goal with Human Spaceflight, Tokyo, Japan, 2019.

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