



Alessia Assonitis

Email address: alessia.assonitis@uniroma1.it

WORK EXPERIENCE

01/11/2022 – CURRENT ROe, Italy

RESEARCH FELLOW DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING- UNIVERSITY OF ROME LA SAPIENZA

Research project "Modeling and numerical simulation of flows around space launchers during the stage separation, with special reference to the VEGA launcher"

EDUCATION AND TRAINING

01/11/2019 – 31/10/2022

PHD PROGRAM IN AERONAUTICS AND SPACE ENGINEERING La Sapienza University

Thesis Shock-fitting techniques on 2D/3D unstructured and structured grids: algorithmic developments and advanced applications.

01/09/2016 – 23/05/2019

MASTER OF SCIENCE DEGREE IN AERONAUTICAL ENGINEERING (PATH OF EXCELLENCE) La Sapienza University

Final grade 110 cum laude /110 |

Thesis Modelling and numerical simulations of shock wave -boundary layer interaction through shock fitting techniques

01/09/2013 – 20/07/2016

BACHELOR'S DEGREE IN AEROSPACE ENGINEERING La Sapienza University

Final grade 110 cum laude /110 | **Thesis** Geared Configuration for Pratt & Whitney Turbofan Engines

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	C2	B2	B2	C1
GERMAN	B1	B1	B1	B1	B1
GREEK	A2	A2	A2	A2	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Microsoft Office | TecPlot360 (Optimal Knowledge) | CFD++ | Beta CAE Systems ANSA | GMSH (Mesh generator, pre- & post processing) | Linux (Debian, Ubuntu) | Programming language Fortran | Matlab | LaTeX | C | Git | C++

● RESEARCH AWARDS

- "Avvio alla Ricerca-Tipo 1" (ID: AR12117A628AD6BB) awarded by La Sapienza University of Rome (2021).
- "Avvio alla Ricerca-Tipo 2" (ID: AR222181699B62DA) awarded by La Sapienza University of Rome (2022)

● PUBLICATIONS

CONFERENCE PAPERS

A. Assonitis, R. Paciorri, A. Bonfiglioli, "*Numerical simulation of shock boundary layer interaction using shock fitting technique*"

Proceedings of XXIV AIMETA Conference 2019, pp. 124-134, Springer International Publishing, 2020. https://doi.org/10.1007/978-3-030-41057-5_10

A. Assonitis, R. Paciorri, A. Bonfiglioli "Numerical simulation of shock-wave/boundary layer interaction using shock fitting technique", In: Proceedings of 14th World Congress on Computational Mechanics (WCCM) ECCOMAS Congress 2021, doi: 10.23967/wccm-eccomas.2020.243

C. Ollivier-Gooch, R. Paciorri, A. Assonitis "An unstructured shock-fitting technique for three-dimensional flows with shock interactions", Proceedings of 14th World Congress on Computational Mechanics (WCCM) ECCOMAS Congress 2021. vol. 200, doi: 10.23967/wccm-eccomas.2020.065

A. Assonitis, M. Ciallella, R. Paciorri, M. Ricchiuto, A. Bonfiglioli "A new shock-fitting technique for 2-D structured grids", In: AIAA Scitech 2022 Forum. 2022. p. 2008., <https://doi.org/10.2514/6.2022-2008>

A. Assonitis, M. Ciallella, R. Paciorri, M. Ricchiuto, A. Bonfiglioli "A shock-fitting technique for 2-D/3-D flows with interactions structured grids using structured grids", In: Proceedings of AIAA Aviation Forum (2022), p. 4123, <https://doi.org/10.2514/6.2022-4123>

R. Paciorri, A. Bonfiglioli, A. Assonitis "The transonic flow past a NACA0012 and the von Neumann paradox", In: Proceedings of AIAA Aviation Forum (2022), p. 3990, <https://doi.org/10.2514/6.2022-3990>

A. Assonitis, C. Ollivier-Gooch, R. Paciorri, A. Bonfiglioli "3D flow computations over blunt bodies at hypersonic speeds using a shock-fitting technique", In: Proceedings of AIAA Aviation Forum (2022), p. 3989., <https://doi.org/10.2514/6.2022-3989>

A. Assonitis, R. Paciorri, M. Ciallella, M. Ricchiuto, A. Bonfiglioli, L. Cirrottola "Numerical simulations of shock interactions on 3D structured grids using a shock-fitting approach", In: Proceedings of AIAA SciTech Forum (2023), AIAA 2023-2135, <https://doi.org/10.2514/6.2023-2135>

V. Orlandini, R. Paciorri, A. Assonitis, F. Saltari and A. Bonfiglioli. "A fluid dynamics technique for modelling inflatable shield for re-entry or aerocapture missions," AIAA 2023-4425. AIAA AVIATION 2023 Forum, p.4425

C.A. Rasoni, A. Assonitis, R. Paciorri, A. Bonfiglioli, E. Cavallini, S. Illiano, S. Ciabuschi. (202 C.E.). A local unstructured re-meshing technique for handling multi-body separation in 2D flows. Proceedings of the Aerospace Europe Conference - EUCASS - CEAS - 2023. <https://doi.org/10.13009/EUCASS2023-037>

JOURNAL PAPERS

A. Assonitis, R. Paciorri, A. Bonfiglioli "Numerical simulation of shock/boundary-layer interaction using an unstructured shock-fitting technique" , Computers&Fluids, Vol.228, 2021, 105058, doi: 10.1016/j.compfluid.2021.105058

L. Campoli, A. Assonitis, M. Ciallella, R. Paciorri, A. Bonfiglioli, M. Ricchiuto, "UnDiFi-2D: an Unstructured Discontinuity Fitting code for 2D grids.", Computer Physics Communications 271 (2022): 108202, <https://doi.org/10.1016/j.cpc.2021.108202>

A. Assonitis, M. Ciallella, R. Paciorri, M. Ricchiuto, A. Bonfiglioli "Extrapolated Shock Fitting for Two-Dimensional Flows on Structured Grids" AIAA Journal 60.11 (2022) 6301-6312