

CV
Emanuele Martelli, Ph.D.

Personal Data.

Date of Birth: October 19, 1976
Place of Birth: Turin, Italy
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Position.

May 2023 - present
Associate professor, Politecnico di Torino, Dipartimento di Ingegneria Meccanica e Aerospaziale.
Scientific sector: aerospace propulsion.

Work experience.

November 2017 - April 2023
Associate Professor, Università degli Studi della Campania "Luigi Vanvitelli", Aversa (CE), Italy.
Scientific sector: aerospace propulsion.

September 2008 - October 2017
Assistant Professor, Università degli Studi della Campania "Luigi Vanvitelli", Aversa (CE), Italy.
Scientific sector: aerospace propulsion.

January 2008, August 2008,
Collaboration with the Department of Mechanics and Aeronautics, University of Rome "La Sapienza".

January 2006, December 2007
Post doc, Department of Mechanics and Aeronautics, University of Rome "La Sapienza".

Novembre 2002 – Novembre 2005
Ph.D student with fellowship in Theoretical and Applied Mechanics, Department of Mechanics and Aeronautics, University of Rome "La Sapienza".

May-July 2001
Stage post-lauream at ESTEC (European Space Agency, Noordwijk, The Netherlands).

Education.

February 2006
Ph.D in Theoretical and Applied Mechanics, Department of Mechanics and Aeronautics, University of Rome "La Sapienza".

May 2001
Laurea in Ingegneria Aerospaziale (5 years course), score: 110 cum laude, University of Rome "La Sapienza".

Scientific responsibility for international and national research projects accepted for funding on the basis of competitive calls involving peer review.

Won computing resources as Principal Investigator in the Italian SuperComputing Resource Allocation (Iskra-B) program of CINECA. Project title: "Detached Eddy Simulation of Jet resonance in Over-Expanded rocket Nozzle." Code: HP10B6F5FL. Budget (standard hours): 513 333. Period: 20/10/2022 - 20/10/2023.

Computing resources won as Principal Investigator in the Italian SuperComputing Resource Allocation (Iskra-B) program of CINECA. Project Title: "High-fidelity numerical analysis of the effect of flame-deflector shape on the acoustic field of a launcher at lift-off." Code: HP10BQTN2X. Budget (standard hours): 500 000. Period: 27/10/2021 - 27/10/2022.

Computing resources won as Principal Investigator in the Italian SuperComputing Resource Allocation (Iskra-B) program of CINECA. Project Title: "Large Eddy Simulations of a supersonic rocket-nozzle Jet Impinging on an inclined flat plate." Code: HP10BWPY1J. Budget (standard hours): 500 000. Period: 14/10/2020 - 14/10/2021.

Computing resources won as Principal Investigator in the Italian SuperComputing Resource Allocation (Iskra-B) program of CINECA. Project title: "Detached eddy simulation of flow separation unsteadiness in a dual bell rocket nozzle." Code: HP10BALEU2. Budget (standard hours): 500 000. Period: 11/05/2019 - 11/05/2020.

Computing resources won as Principal Investigator in the Italian SuperComputing Resource Allocation (Iskra-B) program of CINECA. Project title: "Delayed detached eddy simulation of a truncated ideal contour rocket nozzle." Code: HP10BZR88R. Budget (standard hours): 500 000. Period: 30/07/2018 - 30/07/2019.

Computing resources won as Principal Investigator in the Italian SuperComputing Resource Allocation (Iskra-B) program of CINECA. Project Title: "Detached and Large Eddy simulation of separated flows in rocket nozzles." Code: HP10BF7UYS Budget (standard hours): 375 000 Period: 3/08/2017 - 3/08/2018

Won computational resources as Principal Investigator in the Italian SuperComputing Resource Allocation (Iskra-B) program of CINECA. Project Title: "Separation Shock Characteristic Frequencies in Overexpanded Rocket Nozzles ". Code: HP10BD97SG Budget (CPU hours): 1 800 000 Period: 5/15/2015 - 5/15/2016.

Scientific responsibility for international and national research projects involving partnership agreements with leading companies and/or public and private entities in their field;

Scientific responsible for the execution of a Research contract between the Department of Industrial and Information Engineering of the Second University of Naples, now University of Campania "L. Vanvitelli", and the Department of Mechanical and Aerospace Engineering of the University of Rome "La Sapienza" entitled "Analysis of Vulcain 2 Engine Operational Anomalies". University of Rome "La Sapienza" client: European Space Agency, Esa contract 4000106961/12/F/MT. Amount due to the University of Campania: 10000 euros. Period: 12/15/12 - 12/15/14

Scientific responsible for the execution of a Research contract between the Department of Engineering of the University of Campania "L. Vanvitelli" and the Department of Mechanical and Aerospace Engineering of the University of Rome "La Sapienza" entitled "Numerical Investigation of Dual Bell Nozzle Flow Separation Stability ". University of Rome "La Sapienza" client: European Space Agency, Esa contract. 4000125260/18/NL/LvH/va. Amount due to the University of Campania: 10000 euros. Period: 8/11/2018 - 8/10/2019.

Scientific responsible for the execution of a contract for research activities between the Department of Engineering of the University of Campania "L. Vanvitelli" and the Aerospace Research Center (CRAS) of the University of Rome "La Sapienza". The activity includes two different strands: "Assessment of VEGA-C Vehicle Acoustics at Lift off" for work-package 7 and "Thrust Unsteadiness of Large SRM affecting the Vehicle dynamics." for work-package 17. University of Rome "La Sapienza" client: European Space Agency, ESA Contract No. 4000120618/17/II/AL. Amount due to the University of Campania: 15000 euros.

Period: 16/4/2021 - 31/10/2022.

National and international reputation and service activities for the scientific community
Achievement of prizes and awards for scientific activity.

Award for the best paper presented in the "Solid Rocket Motor" section of the Propulsion and Energy Forum 2021. Title: "Implicit Large-Eddy Simulation of Solid Rocket Motors using the Immersed Boundary Method" (AIAA-2021-3696). Authors. Matteo Bernardini, M. Cimini, and F. Stella, Sapienza University of Rome; E. Cavallini, Italian Space Agency; A. Di Mascio, University of L'Aquila; F. Salvatore, CINECA; E. Martelli, Università degli Studi della Campania "L. Vanvitelli"

Date: 21/10/2021

Funding for basic research activities, referred to in Article 1, paragraphs 295 et seq. of Law No. 232 of December 11, 2016. Award won as a permanent researcher with a score for scientific production of 29.

Date: 30/03/2018

Awarded recognition as a reviewer by the editors of the international English-language journal Acta Astronautica, of Elsevier publishing house, for contributing 65 reviews since 2016.

Date: 01/12/2021

Participation in international congresses as an invited speaker or scientific committee member;

Member of the technical committee, for the propulsion physics section, of the international conference 9th European Conference for Aeronautics and Space Sciences EUCASS-3AF, June 27-July 1, 2022, Lille, France.

Activities as reviewer of international journals:

Journal of Propulsion and Power (American Institute of Aeronautics and Astronautics).

Journal of Aerospace Engineering (SAGE).

Acta Astronautica (Elsevier).

Journal of Thermophysics and Heat Transfer (American Institute of Aeronautics and Astronautics).

AIAA Journal (American Institute of Aeronautics and Astronautics).

Teaching Activities.

Teaching assignments at Italian and/or foreign universities;

Polytechnic University of Turin

Teaching assignment for the following courses of the Master's Degree in Aerospace Engineering:

- Advanced Endoreactors and Space Access.

- Aircraft Engines.

At the University of Campania "L. Vanvitelli":

Teaching assignment for the Aerospace Propulsion course (6 CFU) of the three-year degree program in Aerospace, Mechanical, Energetic Engineering (current course name). From the academic year 2008/2009 onward.

Teaching assignment for the Aerospace Propulsion 2 course (6 CFU) of the master's degree program in Aerospace Engineering . Academic year 2015/2016 onwards.

Teaching assignment for the Advanced Aerospace Propulsion course (6 CFU) of the master's degree program in Aerospace Engineering. From the academic year 2019/2020 onward.

At the University of Rome "La Sapienza":

Professional teaching assignment as part of the Second Level University Master's Degree in "Space Transportation Systems", University of Rome "La Sapienza". Lecture title: "Dual Bell Nozzles."

Academic year 2013/2014 onwards.