

Curriculum Vitae

Personal information

First name /Family name: Davide Lengani
E-mail: davide.lengani@edu.unige.it

Actual position

From the 1st November 2022, he is associate professor at the University of Genoa, where he is lecturer of “Measurement techniques for fluid machinery” (2015-now), “BigData Analysis for fluid machinery” (2021-now), and “Machines and systems for energy and propulsion” (2022-now). He has also been lecturing “Turbomachinery” (2018-2021). From March 2022 he is habilitated as Full Professor

Education

Davide Lengani received the master degree in mechanical engineering at the University of Genoa, Genoa, Italy, in September 2004 (mark 110/110 cum laude).

In 2006 he received the diploma for the “One Year Post-Graduate Diploma Course” (currently called “Research Master in Fluid Dynamics”) at the Von Karman Institute, Bruxelles, Belgium. During the period at VKI he developed a diploma project entitled “Heat Transfer Investigation of the Cooled Squealer Tip Section of an HP Turbine Blade”, Tutor Prof. Tony Arts.

In 2008 he received the Ph.D. in Fluid Machines Engineering at the University of Genoa, with a dissertation: “An Experimental Study on Turbulent Boundary Layer Separation Control for Aero Engine Internal Ducts”, Tutor Prof. Pietro Zunino.

Work Experience

- From November 2019 since October 2022, he has been tenure track assistant professor (RTD/B) at the University of Genoa
- From May 2013 since October 2019, he has been employed at the University of Genoa as a research engineer.
- From December 2009 since December 2012, he has been employed as research engineer, post-doc fellow, at the Graz University of technology at the The Institute for Thermal Turbomachinery and Machine Dynamics.
- From January 2008 since November 2009, he has been employed at the University of Genoa as research engineer.
- From January 2005 since December 2007 he has been PhD student at the University of Genoa. During this period, from October 2005 to July 2006, he was at the VKI.

Research activity

His primary research interests are in the field of turbine blade unsteady interactions, boundary layer separation and flow control, turbine aeroacoustic, tip leakage flows and heat transfer.

He has been involved in several EC founded projects: AIDA (Aggressive Intermediate Ducts Aerodynamics), TLC (Towards Lean Combustion), TATMo (Turbulence and Transition Modelling for Special Turbomachinery Applications), and E-BREAK (Engine BREAKthrough components and subsystems) at the University of Genoa, AITEB2 (Aerothermal Investigation on Turbine Endwalls and Blades) at the Von Karman Institute, and DREAM (ValiDation of Radical Engine Architecture

SystemS) at the Graz University of technology. He has been also involved in several national founded projects.

He has been responsible for several measurement campaign at the University of Genoa, the Von Karman Institute for fluid dynamics, and the Graz University of Technology. He has acquired a large experience in instrumenting and performing measurement in low and high-speed rig ranging from low speed cascade (Genoa) to high speed transonic turbine (Graz). He is expert of different measurement techniques such as Five hole pressure probes, Hot-Wire, Particle Image Velocimetry, Laser Doppler Velocimetry, fast response pressure transducers, Fast Response Aerodynamic Pressure Probe.

His recent research activity includes the development of state of the art post processing techniques for experimental and high-fidelity CFD data: he applies data reduction method such as multi-dimensional FFT, wavelet, and data driven analysis such as proper orthogonal decomposition (POD) and dynamic mode decomposition (DMD).

Current research grants:

- He is responsible for the University of Genoa research group of the ACROSS (H2020-JTI-EuroHPC-2019-1) project, with a budget of 354k€. The project started the 1st of March 2021 and will last 3 years. The project aims at identifying reduced order model for the description of the design space parameter variation effects on Low Pressure Turbine efficiency

- He is coordinator for the University of Genoa research group of the TSCALE (H2020-MSCA-IF-2020) project, with a budget of 256k€. The project started the 1st of April 2022 and will last 3 years. TSCALE project is developing a new set of low-order models each applicable to a different range of scales present in turbomachinery components.

[Track record](#)

He is author of more than 100 publications (109 indexed in Scopus), with 59 of them published within international journals.

The bibliometric indexes are (at 20th February 2023):

overall product in Scopus: 109

number of journal publications: 59

citations: 1092

H-index: 20

He is reviewer for several journal and conferences, among which:

Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences; AIAA Journal; ASME Journal of Engineering for Gas Turbines and Power; Computers and Fluids; Engineering Science and Technology, an International Journal; Entropy; Experimental Thermal and Fluid Science; International Journal of Heat and Mass Transfer; International Journal of Rotating Machinery; International Journal of Thermal Sciences; Journal of Aerospace Engineering; Journal of Computational Methods in Sciences and Engineering; Journal of Fluid Mechanics; Journal of Thermal Science; Mechanical Systems and Signal Processing; Physics of Fluids; ASME Turbo Expo; European Turbomachinery Conference