

# Michele Viviani

Full Professor

## EDUCATION AND TRAINING

1994

**High School Diploma**

Scientific High School M.L. King

2000

**MSc in Naval Architecture and Marine Engineering**

Genoa University

2004

**PhD in Ship and Leisure Boat design disciplines**

Genoa University

## PROFESSIONAL HISTORY

2005-2014

**Researcher**

SSD ING-IND/01 Naval Architecture

Genoa University

2014-2020

**Associate Professor**

SSD ING-IND/01 Naval Architecture

Genoa University

2020-ora

**Full Professor**

SSD ING-IND/01 (successively IIND01/A) Naval Architecture

Genoa University

## ACADEMIC APPOINTMENTS

2010-2012

**Laboratory Head**

Head of Cavitation Tunnel Laboratory of the Department of Electrical, Electronic, Telecommunication Engineering and Naval Architecture

Genoa University

2010-2012

**Laboratory Head**

Head of IDRO Laboratory (Cavitation Tunnel and Towing Tank) of the Department of Electrical, Electronic, Telecommunication Engineering and Naval Architecture

Genoa University

2018-2020

**Deputy Director**

Deputy Director of the Department of Electrical, Electronic, Telecommunication Engineering and Naval Architecture  
Genoa University

2019-2020

**Member of Technical Committee**

Member of the Technical Committee of the University Strategic Centre “Sea Study Centre” of Genoa University  
Genoa University

2020-2021

**President of Strategic Centre**

President of the University Strategic Centre “Sea Study Centre” of Genoa University  
Genoa University

2021-ora

**Director**

Head of Department of Electrical, Electronic, Telecommunication Engineering and Naval Architecture  
Genoa University

## EXPERIENCE

SCIENTIFIC RESPONSIBILITY FOR RESEARCH PROJECTS ACCEPTED FOR FUNDING ON THE BASIS OF COMPETITIVE CALLS INVOLVING PEER REVIEW

2007-2008

PNRM Project in cooperation with CETENA “Optimization of predictive methods for maneuvering characteristics of military ships”

2009-2011

PNRM Project in cooperation with CETENA and INSEAN “Study of an innovative system for maneuverability tests on free-running models - PROSSIMA”

2012-2015

FAR-MIUR Research Project “CLUSTER” in the context of the Ligurian Marine Technology District (Lead partner: Fincantieri)

2019-2022

PON Research Project (2017 call) “Autonomous Robotics for the Extended Ship (ARES)” in collaboration with CNR, SEASTEMA

2019-2024

LIFE 2018 Project (ENV) (2019-2024) Reference number LIFE18 ENV/FR/000308 “Underwater Noise Impact Reduction of Maritime Traffic and Real-time Adaptation to Ecosystems (LIFE-PIAQUO)” in collaboration with FINCANTIERI, CETENA, Naval Group, Kongsberg, and other partners

2022-2025

PNRR: National Center for Sustainable Mobility (MOST) – Spoke 3 and Spoke 10

**TEACHING OR RESEARCH POSITIONS (FELLOWSHIPS) AT FOREIGN UNIVERSITIES AND RESEARCH INSTITUTES**

2015-ora Member of the Hydro Testing Forum (HTF)

Member of the Hydro Testing Forum (HTF) with the IDRO laboratory (Cavitation Tunnel and Towing Tank); partners: MARIN, CTO, CNR/INM (formerly INSEAN), DGA/BEC, HSVA, KRISO, SINTEF (formerly Marintek), QinetiQ, SSPA, NMRI, research centers Sirehna, VTT, Universities of Newcastle, Duisburg-Essen, TU Delft, Twente, University of Rome 'La Sapienza', University of Rostock – Member of the Community of Practice (CoP): Noise

**EDITORSHIP OR PARTICIPATION IN EDITORIAL BOARDS OF JOURNALS, PUBLISHING SERIES, ENCYCLOPAEDIAS AND TREATISES**

2018-now Editorial Board Member - Journal of Marine Science and Engineering (Ocean Engineering Section)

**PRIZES AND ACCOLADES FOR SCIENTIFIC ACTIVITY, INCLUDING MEMBERSHIP OF ACADEMIES**

2001-2004 Member of ST-NSM (Specialist Team – Naval Ship Manoeuvrability), NATO (NATO Naval Group 6)

Development of manoeuvrability standards

2008-2010 Member of ST-SM (Specialist Team – Seaway Mobility), NATO (NATO Naval Group 6)

Development of manoeuvrability standards and guidelines

2011 Best Paper Award 2011 for Ships and Offshore Structures journal

S.Brizzolara, L.Savio, M.Viviani, Y.Chen, P.Temarel, N.Couty, S.Hoflack, L.Diebold, N. Moirod, A.Souto Iglesias (2011) "Comparison of experimental and numerical sloshing loads in partially filled tanks", Ships and Offshore Structures , Vol. 6,Nos.1-2, 2011,15-43, ISSN:1744-5302 print/1754-212X online – doi: 10.1080/17445302.2010.522372

2011 Significant Paper for Sname Transactions journal

A.Di Mascio, G.Dubbioso, C.Notaro, M.Viviani, (2011) "Investigation of twin screw naval ships manoeuvrability behavior", Journal of Ship Research, Vol.55, N.4, December 2011, p. 221-248(28)- ISSN 0022-4502, Online ISSN: 1542-0604 - doi: 10.5957/JOSR.55.4.090031

2013 Medal of Distinction in International Journal of Maritime Engineering

Ruscelli,D., Gualeni,P., Viviani,M. (2012) "An Overview of Planing Monohulls Transverse Dynamic Stability and Possible Implications with Static Intact Stability Rules" , Transactions of the Royal Institution of Naval Architects Part B: International Journal of Small Craft Technology, Volume 153, Part B2, Jul-Dec 2012 ISSN: 1740-0694 doi: 10.3940/rina.ijsc.2012.b2.134, p.B-73-B-86

**2017-2021** Member of the Specialist Committee on Hydrodynamic Noise of the ITTC  
Development and update of testing procedures for measuring noise radiated by cavitating propellers

**OTHER EXPERIENCES – RESPONSIBILITY OF INDUSTRIAL RESEARCH PROJECTS**

**2007** Development of numerical and experimental methods for the design and optimization of ducted propellers  
Contract with ZF Hurth Marine

**2010** Tests for cavitation and noise measurement  
Contract with Fincantieri

**2011-12** Optimization of a Snipe Class boat  
Contract with DB Marine

**2013-14** Development of a manoeuvring simulator for a planing boat with azimuthal propulsors  
Contract with ZF Padova

**2013-14** Tests of propellers in axial cylindrical tunnel for new propeller blade geometry development  
Contract with Fincantieri

**2014-15** Development of a design and optimization chain for naval propellers  
Contract with Azimut-Benetti – MISE Project Advanced Boat Concept (ABC)

**2015** Cavitation tunnel tests for feasibility assessment of 3D printing techniques for marine propeller scale models,  
Contract with Fincantieri

**2015** Pilot study for maneuverability software update  
Contract with Fincantieri

**2016** Cavitation tunnel tests for flow measurement around a ducted propeller using LDV techniques  
Contract with Fincantieri

**2016-2018** Experimental tests at cavitation tunnel for hydrodynamic characteristics, cavitation phenomena, radiated noise, and induced pressures for three propellers with different pitches for the development of semiempirical models  
Contract with Fincantieri

**2016-2018** Development of new manoeuvrability software (NEWMAN)  
Contract with Fincantieri

**2018-2021** Cavitation tunnel tests and HPC numerical calculations for the “Y-SEA” project – MISE funds  
Contract with Azimut Benetti

**2019-2021** Software for cruise ship maneuverability prediction – CRUISEMAN  
Contract with Fincantieri

**2019-2021** Development of open-source numerical models for manoeuvrability (MANNUM)  
Contract with Fincantieri

**2020-2021** Development of maneuvering simulation models and propulsion systems for real-time and batch applications  
Contract with CETENA

**2021-2022** NAVIRIS-Cavitation Tunnel, funded by Fincantieri S.p.A. within the Fincantieri / Naval Group joint research program  
Contract with Fincantieri

#### OTHER EXPERIENCES – TESTS FOR THIRD PARTIES

**2006-ora** Various tests for third parties:

- at cavitation tunnel, for propellers and lifting surfaces (Fincantieri, CETENA, Eliche Radice, Detra, ZF Marine, Victoria University, Strathclyde University, etc.)
- at towing tank for resistance measurements for displacement and planing hulls
- for measurements in full scale (during sea trials) of cavitating phenomena on propellers