

PERSONAL INFORMATION

Fabrizio Ortolani



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WORK EXPERIENCE

2/2010 onwards

Research Technologist

Institute of Marine Engineering - Italian National Research Council (INM-CNR)

Currently: Outdoor Maneuvering Basin Manager

2017 – 2021: Head of the transducers' development laboratory

Duties:

- Preparation of proposals and involvement in national and international projects.
- Design of experimental fluid dynamics tests, setup and test execution.
- Mechanical design of equipment and measuring systems.
- Work with senior designers to the development of electronic devices.
- Development of automated and control systems.
- Data analysis and technical report.

Business or sector: Research

9/2009 - 3/2010

Technical Consultant

Spin Italia srl

- Design and development of a custom dual-computer-one-user console, for military applications both on vehicle and as a standalone station.
- Conversion of a standard mission military vehicle to an advanced, "on-site", CBRN reconnaissance station.
- MIL qualification of mechanical and electronic devices for Thales.

Business or sector: R&D – Defence

1/2009 - 8/2009

QA & Validation employee

Intervet/Schering-Plough Animal Health - Pharmaceutical

- Validation and qualification of plants and equipment. Technical report and procedures writing.
- Validation of equipment and procedures. Production plants. SOPs and GMPs. CCM.

Business or sector: Pharmaceutical

10/2006 – 10/2008

Technologist

Italian Nuclear Physics Institute (INFN)

- R&D of electronic devices.
- Development of data-bases and active web pages for on-line data viewing and analysis.

Business or sector: Research

6/2006 – 9/2006

Analyst / programmer

Resi Informatica Srl

- Communication protocols study and software development for net monitoring

Business or sector: IT

EDUCATION AND TRAINING

- 2021 **Phd in Naval Engineering**
Polytechnic school of Genoa
- Naval architecture, underwater acoustics, experimental hydrodynamics, propulsion
- 2004 **Master of Science: Physics with electronics and cybernetics spec.**
University of Rome 'Tor Vergata'
- Physics, electronics, AI, neural networks, neuromorphic implementation of algorithms and devices, mechatronics

PERSONAL SKILLS

- Mother tongue(s) Italian
- Other language(s) English (C1)
- Job-related skills
- Design of strain gauges based transducers and SG installation (II Lev. HBM certification course)
 - Mechanical design
 - Electronics and lab equipment
 - Installation and calibration of sensors, signal conditioning, data acquisition and analysis
- Digital skills
- PTC Creo4 (course)
 - Python for Computational Science (course)
 - HTML and Java programmer (certificate)
 - Matlab
 - Solidworks,
 - Autocad,
 - VB, PHP, SQL, Actionscript, C, C++
- Projects and responsibilities
- Responsible of Sustainable Mobility Center (Centro Nazionale per la Mobilità Sostenibile) Spoke 3 Waterways, Tasks 1.6, 2.7, 4.4
 - Responsible for Italian Navy project (intern. n. 10CT17) aimed at the assessment of a vessel's propulsive system in off-design conditions.
 - Responsible for experimental activities of EDA - ETLAT project, for open water test of underwater acoustic sensors arrays
 - Development of a novel experimental setup for single blade loads measurements (EDA-FLOWIS)
 - Development of custom dynamometer for real-time measurement of torque and thrust developed by an outboard motor. (Yamaha – Fluid Techno ltd)
 - Development a novel setup for the investigation of radial load exerted on shaft bearing, during ship manoeuvres. (Italian Navy – PNRM PROSSIMA 2 Project) - Patented transducer WO2015145313A1
 - Responsible for experimental activities of the AUTODROP project, aimed at the development of an autonomous vehicle carrying sensors for subsea and seabed analysis
 - Development of custom, underwater communicating, strain gages based transducer and acquisition system for torque measurement on propeller's blades (HYMAR project)
 - Development of instrumented flaps, able to measure forces and moments arising during the ditching phase of a model of the Intermediate eXperimental Vehicle (IXV) developed by the European Space Agency (ESA)

ADDITIONAL INFORMATION

- Publications
- Ortolani F., Santic I., Dubbioso G. 'Experimental investigation of the effect of inward and outward propeller rotation on single blade and propeller loads' (2022) Ocean Engineering, 266, art. no. 112799 DOI: 10.1016/j.oceaneng.2022.112799
- Dubbioso G., Muscari R., Ortolani F., Di Mascio A. 'Numerical analysis of marine propellers low frequency noise during maneuvering. Part II: Passive and active noise control strategies' (2022) Applied Ocean Research, 125, art. no. 103201 DOI: 10.1016/j.apor.2022.103201
- Abraham J. et Al. 'Correlation of the highest-energy cosmic rays with the positions of nearby active

galactic nuclei' (2008) *Astroparticle Physics*, 29 (3), pp. 188 – 204 DOI: 10.1016/j.astropartphys.2008.01.002

Ortolani F., Dubbioso G. 'Development and experimental implementation of a biaxial transducer to measure radial loads on a rotor shaft' (2022) *Measurement: Journal of the International Measurement Confederation*, 202, art. no. 111776 DOI: 10.1016/j.measurement.2022.111776

Falchi M., Ortolani F., Shi W., Stark C., Aloisio G., Grizzi S., Dubbioso G. 'Experimental investigation on the effect of Leading Edge Tubercles on the Performance of Marine Propellers in fully wet condition' (2022) *Ocean Engineering*, 255, art. no. 111249 DOI: 10.1016/j.oceaneng.2022.111249

Calcagni D., Dubbioso G., Capone A., Ortolani F., Broglia R. 'A generalized hybrid ranse/bem approach for the analysis of hull-propeller interaction in off-design conditions' (2021) *Journal of Marine Science and Engineering*, 9 (5), art. no. 482 DOI: 10.3390/jmse9050482

Dubbioso G., Muscari R., Ortolani F., Di Mascio A. 'Numerical analysis of marine propellers low frequency noise during maneuvering' (2021) *Applied Ocean Research*, 106, art. no. 102461 DOI: 10.1016/j.apor.2020.102461

Ortolani F., Tani G., Viviani M., Dubbioso G. 'Experimental investigation of single blade loads by captive model tests in pure oblique flow. Part II: Propeller in-plane loads and preliminary comparison of single blade loads during transient phases' (2021) *Ocean Engineering*, 234, art. no. 109149 DOI: 10.1016/j.oceaneng.2021.109149

Dubbioso G., Ortolani F. 'Analysis of fretting inception for marine propeller by single blade loads measurement in realistic operating conditions. Straight ahead and turning circle maneuver' (2020) *Marine Structures*, 71, art. no. 102720 DOI: 10.1016/j.marstruc.2020.102720

Ortolani F., Viviani M., Tani G., Dubbioso G. 'Experimental investigation of single blade loads by captive model tests in pure oblique flow' (2020) *Ocean Engineering*, 196, art. no. 106789 DOI: 10.1016/j.oceaneng.2019.106789

Ortolani F., Capone A., Dubbioso G., Alves Pereira F., Maiocchi A., Di Felice F. 'Propeller performance on a model ship in straight and steady drift motions from single blade loads and flow field measurements' (2020) *Ocean Engineering*, 197, art. no. 106881 DOI: 10.1016/j.oceaneng.2019.106881

Ortolani F., Dubbioso G. 'In-plane and single blade loads measurement setups for propeller performance assessment during free running and captive model tests' (2020) *Ocean Engineering*, 217, art. no. 107928 DOI: 10.1016/j.oceaneng.2020.107928

Ortolani F., Dubbioso G. 'Experimental investigation of blade and propeller loads: Steady turning motion' (2019) *Applied Ocean Research*, 91, art. no. 101874 DOI: 10.1016/j.apor.2019.101874

Ortolani F., Dubbioso G. 'Experimental investigation of single blade and propeller loads by free running model test. Straight ahead sailing' (2019) *Applied Ocean Research*, 87, pp. 111 – 129 DOI: 10.1016/j.apor.2019.03.005

Ortolani F., Dubbioso G., Muscari R., Mauro S., Di Mascio A.D. 'Experimental and numerical investigation of propeller loads in off-design conditions' (2018) *Journal of Marine Science and Engineering*, 6 (2), art. no. 45 DOI: 10.3390/jmse6020045

Ortolani F., Dubbioso G., Santic I., Mauro S. 'Experimental investigation of blade and propeller loads during straight ahead sailing' (2018) *Technology and Science for the Ships of the Future - Proceedings of NAV 2018: 19th International Conference on Ship and Maritime Research*, pp. 829 – 836 DOI: 10.3233/978-1-61499-870-9-829

Muscari R., Dubbioso G., Ortolani F., Di Mascio A. 'Analysis of propeller bearing loads by CFD. Part II: Transient maneuvers' (2017) *Ocean Engineering*, 146, pp. 217 – 233 DOI: 10.1016/j.oceaneng.2017.09.050

Dubbioso G., Muscari R., Ortolani F., Di Mascio A. 'Analysis of propeller bearing loads by CFD. Part I: Straight ahead and steady turning maneuvers' (2017) *Ocean Engineering*, 130, pp. 241 – 259 DOI: 10.1016/j.oceaneng.2016.12.004

Muscari R., Dubbioso G., Ortolani F., Di Mascio A. 'CFD analysis of the sensitivity of propeller bearing loads to stern appendages and propulsive configurations' (2017) *Applied Ocean Research*, 69, pp. 205 – 219 DOI: 10.1016/j.apor.2017.11.004

Ortolani F., Mauro S., Dubbioso G. 'Investigation of the radial bearing force developed during actual ship operations. Part 2: Unsteady maneuvers' (2015) *Ocean Engineering*, 106, pp. 424 – 445 DOI: 10.1016/j.oceaneng.2015.06.058

Ortolani F., Mauro S., Dubbioso G. 'Investigation of the radial bearing force developed during actual ship operations. Part 1: Straight ahead sailing and turning maneuvers' (2015) *Ocean Engineering*, 94, pp. 67 – 87 DOI: 10.1016/j.oceaneng.2014.11.032

Magionesi F., Ciappi E., La Gala F., Ortolani F., Muscari R., Di Mascio A., Hernando J.M.F. 'Measurements and modelling of turbulent boundary layer excitation and induced structural response on a ship: PART I full scale wall pressure fluctuations' (2012) 41st International Congress and Exposition on Noise Control Engineering 2012, INTER-NOISE 2012, 10, pp. 7970 - 7981

La Gala F., Dubbioso G., Ortolani F., Sellini M. 'Preliminary evaluation of control and manoeuvring qualities for the AUTODROP-UUV vehicle' (2012) *IFAC Proceedings Volumes (IFAC-PapersOnline)*, 9 (PART 1), pp. 132 – 137 DOI: 10.3182/20120919-3-IT-2046.00023

Abraham J. et Al 'The fluorescence detector of the Pierre Auger Observatory' (2010) *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 620 (2-3), pp. 227 – 251 DOI: 10.1016/j.nima.2010.04.023

Abraham J. et Al. Erratum to "Atmospheric effects on extensive air showers observed with the surface detector of the Pierre Auger observatory" [*Astroparticle Physics* 32(2) (2009), 89-99] (DOI:10.1016/j.astropartphys.2009.06.004) (2010) *Astroparticle Physics*, 33 (1), pp. 65 – 67 DOI: 10.1016/j.astropartphys.2009.10.005

Abraham J. et Al. 'Atmospheric effects on extensive air showers observed with the surface detector of the Pierre Auger observatory' (2009) *Astroparticle Physics*, 32 (2), pp. 89 – 99 DOI: 10.1016/j.astropartphys.2009.06.004

Abraham J. et Al. 'Upper limit on the cosmic-ray photon fraction at EeV energies from the Pierre Auger Observatory' (2009) *Astroparticle Physics*, 31 (6), pp. 399 – 406 DOI: 10.1016/j.astropartphys.2009.04.003

Abraham J. et Al. 'Limit on the diffuse flux of ultrahigh energy tau neutrinos with the surface detector of the Pierre Auger Observatory' (2009) *Physical Review D - Particles, Fields, Gravitation and Cosmology*, 79 (10), art. no. 102001 DOI: 10.1103/PhysRevD.79.102001

Abraham J. et Al. 'Upper limit on the cosmic-ray photon flux above 10¹⁹ eV using the surface detector of the Pierre Auger Observatory' (2008) *Astroparticle Physics*, 29 (4), pp. 243 – 256 DOI: 10.1016/j.astropartphys.2008.01.003

Abraham J., et Al. 'Upper Limit on the Diffuse Flux of Ultrahigh Energy Tau Neutrinos from the Pierre Auger Observatory' (2008) *Physical Review Letters*, 100 (21), art. no. 211101 DOI: 10.1103/PhysRevLett.100.211101

Abraham J. et Al. 'Observation of the suppression of the flux of cosmic rays above 4×10¹⁹eV' (2008) *Physical Review Letters*, 101 (6), art. no. 061101 DOI: 10.1103/PhysRevLett.101.061101

Knapik R et Al. 'The absolute, relative and multi-wavelength calibration of the Pierre Auger observatory fluorescence detectors' (2007) *Proceedings of the 30th International Cosmic Ray Conference, ICRC 2007*, 4 (HE PART 1), pp. 343 - 346

Patents Ortolani F., Dubbioso G. 'Trasduttore di forze radiali, in particolare per alberi rotanti'. N. RM2014A000164.

Ortolani F., Dubbioso G. 'Transducer of radial forces, in particular for rotating shafts'. N. WO2015145313A1