STEFANO PARMEGGIANI, M.Sc., Ph.D.

- Vision and commitment for a sustainable future -

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DESIRED EMPLOYMENT

Climate change mitigation and adaptation; Energy savings and Renewables; Environmental engineer; Landscape and soil management; Wastes management; Coastal engineering; Water management; LCA and Environmental certifications; European projects and sustainable planning; R&D; Environmental education and popular science; Social innovation processes.

WORK EXPERIENCE

January 2015 to present: Consultant engineer (Rimini area, Italy).
Independent advisor in Environmental Engineering: EU-funded project design and management, sustainable strategy for enterprise, environmental analysis, waste and water management, coastal morphodynamics, energy efficiency and renewable energies, sustainable R&D, environmental training and communication.

June 2013 to present: Science popularizer and environmental educator (Rimini area, Italy).
School educator, guided visits of technical installations, author of web-radio program and lecturer on sustainability issues for any public. Allows the understanding of global problems, design and implements local solutions. Topics include: energy, food and water, mobility, wastes and resource management, climate change, ecology, inclusive and participatory social and cultural innovation processes.

September 2012 to January 2013: Research assistant at Aalborg University (Aalborg, Denmark)
Research and development related to the mooring design of the Wave Dragon wave energy converter.

August 2009 to June 2012: Research engineer at Wave Dragon Ltd. (London, U.K.)
Research and development related to the demonstration of the full-scale feasibility of the Wave Dragon wave energy converter. Main tasks included: improvement of modeling tools related to control and performance assessment, feasibility evaluation of commercial units, design of the mooring system, result dissemination and presentation to international scientific audiences.

EDUCATION AND TRAINING

April to June 2015: Practical workshop on project design and management according to the GOPP (Goal Oriented Project Planning) carried out by Augusta Pini Foundation (Misano Adriatico, Italy).

April 2010 to May 2013: PhD degree at the Department of Civil Engineering of Aalborg University (Aalborg, Denmark).
Thesis: “Modeling and testing of the Wave Dragon wave energy converter towards full scale deployment – Analysis of overtopping performance and mooring load response”, carried out by means of experimental testing in wave basin, numerical modeling and analysis of sea trials data. Results include the improvement of the available overtopping model, performance assessment of commercial units, evaluation of mooring design load and appraisal of load-reduction strategies.

August to November 2011: Visiting PhD student at Centre for Ships and Oceanic Structures, Norwegian University of Science and Technology (Trondheim, Norway).
Calibration of a numerical model for hydrodynamic and mooring load analysis on the Wave Dragon wave energy converter, based on experimental data from tank testing. The numerical model is used to improve the conceptual mooring system of a commercial units of the device, following criteria of reliability and economic feasibility.

August 2009 to June 2012: Fellow under the European FP7 program Wavetrain2, a Marie Curie Initial Training

Network.
EC fellowship program aimed at training professionals in the emerging field of wave energy conversion. Under a pan-European approach, the fellow combines high-level courses led by the leading specialists in the sector and site-visits to the main wave energy installations across Europe with in-depth training at a partner institution. Topics of the trainee span from technical and operational to socio-economic and environmental issues.

October 2008 to April 2009: Post-graduate internship at Aalborg University (Aalborg, Denmark).
Geometry optimization of the Tideng tidal stream power converter and power production assessment at a possible deployment location, by means of CFD simulations and experimental tests in a flume.

July 2008: Passes the national exam for the civil and environmental engineer register of the Bologna district, Italy.

September 2002 to March 2008: M. Sc. in Environmental Engineering at the University of Bologna (Bologna, Italy).
5th year final thesis: "Analysis of the effects of nourishment and dredging on submerged sandy beaches by means of 2DH numerical simulations" (Coastal Engineering).
3rd year final thesis: "Biological techniques for Nitrogen removal from civil wastewaters" (Sanitary Engineering).

August 2006 to July 2007: ERASMUS exchange student at the Polytechnic University of Valencia (Spain).

May 2005: Trainee at ARPA Emilia Romagna - Regional Environmental Protection Agency (Rimini, Italy).
Sampling the rivers of the Rimini province in view of their classification in the national quality system.

PUBLICATIONS LIST

"Experimental Update of the Overtopping Model Used for the Wave Dragon Wave Energy Converter". Parmeggiani S., Kofoed J.P., Friis-Madsen E. Energies 2013, 6 (4), 1863-1886; doi: 10.3390/en6041863.

"Experimental Study Related to the Mooring Design for the 1.5 MW Wave Dragon WEC Demonstrator at DanWEC". Parmeggiani S., Kofoed J.P., Friis-Madsen E. Energies 2013, 6(4), 1961-1992; doi:10.3390/en6041961.

"Comparison of mooring loads in survivability mode on the Wave Dragon wave energy converter obtained by a numerical model and experimental data", Parmeggiani S. et al., proceedings of the 31st International Conference on Ocean, Offshore and Arctic Engineering. Rio de Janeiro, Brazil, July 2012.

"Performance assessment of the Wave Dragon wave energy converter based on the EquiMar methodology", Parmeggiani S. et al., proceedings from the 9th European Wave and Tidal Energy Conference, Southampton, U.K., September 2011.

"Experimental modelling of the overtopping flow on the Wave Dragon wave energy converter", Parmeggiani S., Kofoed J.P., Friis-Madsen E., proceedings from the 21st International Offshore and Polar Engineering Conference. Maui, Hawaii, U.S.A, June 2011.

"Extreme loads on the mooring lines and survivability mode for the Wave Dragon wave energy converter", Parmeggiani S., Kofoed J.P., Friis-Madsen E., proceedings from the World Renewable Energy Congress. Linköping, Sweden, May 2011.

"Modelling of the overtopping flow on the Wave Dragon wave energy converter", Parmeggiani S. et al., proceedings from the 3rd International Conference on Ocean Energy. Bilbao, Spain, October 2010.

LANGUAGES

Italian: Mother tongue
English: Fluent oral and written
Spanish: Fluent oral and written
Catalan: Basic

PERSONAL SKILLS AND COMPETENCES

- Great vision allows orientation and deep implication in the chosen work activity.
- Excellent organizational skills and methodical attitude at work, with a pragmatic approach at problem-solving.
- Very good analysis, synthesis and communication capabilities.
- Good versatility to a wide range of applications, supported by high creativity.
- Positive attitude towards diversities, shaped after several experiences in multicultural environments.
- Strong tendency to connect the implementation of practical actions to a wide-angle systemic analysis.

COMPUTER SKILLS AND COMPETENCES

- Hydrodynamic and mooring analysis of offshore structures SESAM (GeniE, HydroD, DeepC).
- Coastal modeling SMC (Sistema de Modelado Costero).
- Computational Fluid Dynamics: Ansys CFX.
- Programming language: Matlab.
- 3D CAD software and AutoCAD.
- Graphics: Adobe Photoshop, Premiere, Audition.