



CURRICULUM VITAE

of

Prof. Emeritus, Dr.-Ing. SPYROS A. MAVRAKOS

e-mail: maorakos@naval.ntua.gr

Athens, July 2022

TABLE OF CONTENTS

1.	GENERAL BIOGRAPHICAL DATA.....	3
2.	PROFESSIONAL HISTORY	3
3.	RESEARCH INTERESTS	4
4.	PROFESSIONAL SOCIETY MEMBERSHIPS	5
5.	UNIVERSITY PROFESSIONAL SERVICES.....	6
6.	SCIENTIFIC AND PROFESSIONAL ACTIVITIES	7
7.	TEACHING – INSTRUCTING	11
7.1	<i>Graduate Courses.....</i>	<i>11</i>
7.2	<i>Post – Graduate Courses</i>	<i>11</i>
7.3	<i>Supervision of PhD Theses</i>	<i>12</i>
7.4	<i>Supervision of Diploma / Master Theses.....</i>	<i>12</i>
8.	RESEARCH ACTIVITIES	12
9.	LIST OF PUBLICATIONS	16
9.1	<i>In refereed international Journals</i>	<i>16</i>
9.1.1.	<i>Publications related to the scientific area of offshore hydrodynamics.....</i>	<i>16</i>
9.1.2	<i>Publications related to the hydrodynamic analysis and evaluation of the efficiency of devices and marine systems for the exploitation of offshore renewable energy sources</i>	<i>18</i>
9.1.3	<i>Publications related to the static and dynamic analysis and optimum design of mooring systems and slender marine structures-Applications.....</i>	<i>19</i>
9.2	<i>In refereed international Conferences</i>	<i>20</i>
9.2.1	<i>Publications Related to the scientific area of offshore hydrodynamics.....</i>	<i>20</i>
9.2.2	<i>Publications related to the hydrodynamic analysis and evaluation of the efficient of wave energy converters</i>	<i>25</i>
9.2.3	<i>Publications related to the static and dynamic analysis and optimum design of mooring systems and slender marine structures-Applications.....</i>	<i>27</i>
9.2.4	<i>Publications related to the design of underwater oceanographic vehicles.....</i>	<i>30</i>
9.2.5	<i>Publications related to the analysis of floating and fixed wind turbine concepts and hybrid systems.....</i>	<i>30</i>
9.3	<i>Books – Chapter in Books.....</i>	<i>32</i>
9.4	<i>Citations</i>	<i>33</i>
9.5	<i>University textbooks</i>	<i>33</i>
9.6	<i>Publications in National and International Workshops, Newspapers</i>	<i>34</i>
9.7	<i>Technical Reports</i>	<i>36</i>
10.	PARTICIPATION IN RESEARCH PROJECTS.....	47
11.	CONSULTANCY SERVICES TO THE INDUSTRY AND VARIOUS BODIES	51
12.	DEVELOPED COMPUTER CODES	53

1. GENERAL BIOGRAPHICAL DATA

DATE OF BIRTH	28 November 1952
MARITAL STATUS	Married, two children
NATIONALITY	Greek
EDUCATION	<u>Secondary level:</u> Varvakios Muster School, Athen, 1964 – 1970 <u>University Level:</u> NATIONAL TECHNICAL UNIVERSITY OF ATHENS Diploma in Naval Architecture and Marine Engineering, Sept. 1976 RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN (RWTH-Aachen), Germany, Dr.-Ing. in Ocean Engineering, Feb. 1981.

2. PROFESSIONAL HISTORY

Dec. 2015 – Feb. 2020	Director and President of the Board of Directors of the Hellenic Centre for Marine Research (HCMR)
Sept. 2014 – Nov. 2015	Deputy Rector for Financial Programming and Development, National Technical University of Athens (NTUA)
Oct. 1996 – Aug. 2020	Professor of Floating Structures, School of Naval Architecture and Marine Engineering, National Technical University of Athens (NTUA) Aug. 2010 – Oct. 2010: On Sabbatical leave, Visiting Prof., Technical University of Berlin, Germany, Institute of Ocean Engineering, Division of Naval Architecture and Ocean Engineering.

Sept. 1996 - July 1991	Associate Professor of Floating Structures, School of Naval Architecture and Marine Engineering, National Technical University of Athens (NTUA)
	Febr. 1992 - Aug. 1992: On Sabbatical leave, Visiting Professor, Department of Ocean Engineering, MIT, Massachusetts, Boston, USA
June 1991 - June 1987:	Assistant Professor of Floating Structures, School of Naval Architecture and Marine Engineering, National Technical University of Athens (NTUA)
May 1987 - April 1984:	Lecturer of Floating Structures, School of Naval Architecture and Marine Engineering, National Technical University of Athens (NTUA)
	Aug. 1985 - June 1985: Visiting Researcher, RWTH - Aachen, Technical University of Aachen, Northern Rhine - Westfalia, Department of Ocean Engineering, Germany.
March 1984 - March 1983:	Freelancer, Naval Architect and Marine Engineer
Febr. 1983 - Jan. 1982:	Military Service in the Hellenic Navy
Dec.1981 - Febr. 1980:	Research Engineer, Department of Mechanical Engineering, Division of Ocean Engineering, RWTH-Aachen
Jan. 1980 - Nov. 1976:	Research Assistant, Department of Mechanical Engineering, Division of Ocean Engineering, RWTH-Aachen

3. RESEARCH INTERESTS

1. Development of theoretical and experimental methods and computer software for the linear and non-linear hydrodynamic analysis (diffraction and radiation problems) of single or multiple interacting large volume floating structures. Evaluation of the first- and second - order sea loads and motions with applications to:
 - ✓ Hydrodynamic analysis and design of several types of offshore structures for the ocean exploration and exploitation (offshore hydrocarbon exploration, production and storage, floating terminals, wave energy converters, floating wind turbines, etc.)

- ✓ Design of open sea fish-farming installations
 - ✓ Hydrodynamic analysis, design and evaluation of several types of floating breakwaters and floating marinas
2. Hydrodynamic analysis and design of oceanographic devices (oceanographic surface buoys, autonomous underwater vehicles - AUV's - for oceanographic applications, gliders)
 3. Development of numerical and experimental methods and computer software for the static and dynamic analysis and optimum design of mooring systems for shallow- and deep-water applications
 4. Numerical and experimental evaluation of the hydrodynamic behavior and the efficiency evaluation of several types of single or interacting wave energy converters (heaving devices, OWC's devices)
 5. Numerical and experimental evaluation of the coupled hydro-aero-elastic behavior of moored offshore floating wind turbines and multi-purpose floating structures for the offshore wind and wave energy sources exploitation
 6. Hydromechanic analysis of moored floating structures in frequency- and time-domain with applications to:
 - ✓ Hydromechanic analysis and design of offshore wind parks (evaluation of the loads and motions due to wave, wind and current action, analysis and design of the mooring system)
 - ✓ Analysis of the dynamic behavior of moored ships in harbors
 7. Maneuvering Characteristics of Ships

4. PROFESSIONAL SOCIETY MEMBERSHIPS

- Technical Chamber of Greece (TEE)
- German Association of Mechanical Engineers (VDI)
- Society of Naval Architects and Marine Engineers (SNAME)
- Greek Association of Naval Architects
- Hellenic Institute of Marine Technology
- European Association of Ocean Energy – EAOE

5. UNIVERSITY PROFESSIONAL SERVICES

- Deputy Rector, Chair of the Research Committee, National Technical University of Athens (Sept. 2014 – Nov. 2015)
- Head of the School of Naval Architecture and Marine Engineering, National Technical University of Athens, 1999-2001
- Head of the Marine Structures Division of the School of Naval Architects and Marine Engineers, National Technical University of Athens, Sept. 2003 – Aug. 2007, Sept. 2013 – Aug. 2014
- Director, Laboratory for Floating Structures and Mooring Systems, <http://lfsms.naval.ntua.gr/>, School of Naval Architects and Marine Engineering, 2005 – 2020.
- Director, Post-Graduate Course in “Marine and Ocean Technology and Science” (1998 – 2018) and President (2018 -2020). Collaborating Departments: Naval Architecture and Marine Engineering (Coordinator), Mechanical Engineering, Electrical and Computer Engineering, Rural and Surveying Engineering, Applied Mathematical and Physical Science from the National Technical University of Athens, The Department of Physics from the National and Kapodistrian University of Athens, and the Hellenic Center for Marine Research (HCMR).
- Coordinator from the NTUA site for the development of a Post – Graduate Course on “Offshore Structures, Systems and Processes for the Hydrocarbon Exploration and Exploitation”. Collaborating Departments: Naval Architecture and Marine Engineering (Coordinator), Mechanical Engineering, Chemical Engineering, Civil Engineering, Mining and Metallurgical Engineering, Rural and Surveying Engineering from the National Technical University of Athens, Mechanical Engineering Department from the University of Thessaly, Department of International and European Studies from the Panteion University and the National Center for Marine Research (NCMR).
- Member, Research Committee, National Technical University of Athens (Sept. 2009 – Aug. 2014)
- Deputy Head, Council for Post-Graduate Studies, National Technical University of Athens, 2003 – 2006, 2010 – 2014.
- Member, Council for Post – Graduate Education, National Technical University of Athens, 1997 – 2014.
- Member, Board of Directors of the Technological Park of Lavrion S.A. (2009 - 2014).
- Deputy Head, Department of Naval Architecture and Marine Engineering, National Technical University of Athens, 1993- 1997.
- Member of the elective body for the nomination of University faculty members (University of Piraeus, University of Aegean, Aristotle University of Salonika, Higher Technological Institution of Athens)

- Member of the independent evaluation Committee for the Maritime Education provided by professional centers of the Ministry of Merchant Marine (3636/17.2.2003 Ministerial Decision)
- Member, Continuing Education Council, National Technical University of Athens, 1993-1997.
- Member, Committee of the Computer Center, National Technical University of Athens, 1984-1994.
- Chairman, Committee for Establishing the Greek Research Institute on Marine Technology and Ocean Engineering, National Technical University of Athens, 1993
- Member, Committee for establishing of Post-Graduate Studies on Ocean Engineering, National Technical University of Athens, 1993-1997.
- Member, National Academic Recognition Center, Committee for the Recognition of degrees in Naval Architecture and Marine Engineers that were obtained abroad, 1984 - 1996

6. SCIENTIFIC AND PROFESSIONAL ACTIVITIES

- Director and President of the Board of Directors of the Hellenic Center for Marine Research (HCMR, Dec. 2015 – Feb. 2020).
- Chairman, Committee established in the Ministry for Environment, Energy and Climate Change for the transition into Greek Law of the 2013/30/EU European Directive on safety of offshore hydrocarbon activities (Sept. 2013 – March 2016)
- Appointed as Representative of the Greek Ministry for Environment, Energy and Climate Change in the EU Offshore Oil and Gas Authorities Group, EUOAG, (Oct. 2012 – March 2017). Ministerial Decision Δ16/Φ2.15/19983 /1109/ 9/10/2012
- Member and Acting Chairman of the Committee established by the Greek Ministry for Environment, Energy and Climate Change for formulating Greek positions on the Proposal for a EU Directive on safety of offshore oil and gas prospection, exploration and production Activities (Dec. 2011- Dec. 2013)
- EU independent review expert for the periodic review of SME Action projects (SME and SME-AG) within FP7 managed by the Research Executive Agency (REA) (1/7/2011 – 31/1/2012 and from 1/1/2013 – 31/8/2013).
- Appointed by Science Foundation Ireland (ISF) to participate as independent expert in the proposals' review of Irish "Research Infrastructure Call 2012" (19/6/2012 – 25/7/2012).
- Appointed by the Irish Science Foundation (ISF) for a Program Progress Site Review at the Hydraulic and Maritime Research Centre, University College Cork (6/4/2011 – 15/7/2011)
- Co-Chairman of the 26th International Workshop on Water Waves and Floating Bodies (IWWWFB2011), 17-20 April 2011, Athens, Greece

- Chairman of the 24th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2005, 12 - 17 June 2005, Chalkidiki, Greece)
- Chairman of the 10th International Conference of the Maritime Association of the Mediterranean (IMAM 2002, May 2002, Rethymnon, Crete)
- Member of the Technical Scientific Committee of the 7th, 8th, 9th, 10th and 11th European Wave and Tidal Energy Conferences (EWTEC, 7th Conference: Sept. 2007, Porto, Portugal; 8th Conference: Sept. 2009, Uppsala, Sweden; 9th Conference: Sept. 2011, Southampton, U.K.; 10th Conference: Aalborg, Sept. 2013, Denmark; 11th Conference: Sept. 2015, Nantes, France)
- Member of the technical program committee of the Offshore Mechanics and Arctic Engineering Conferences (OMAE2006, OMAE2007, OMAE2008, OMAE2009, OMAE2010, OMAE2011, OMAE2012)
- Member of the Technical Program Committee of the 22nd International Offshore (Ocean) and Polar Engineering Conference (ISOPE 2012).
- General Secretary, Hellenic Institute of Marine Technology, 1998 - 2000
- Vice President, Hellenic Institute of Marine Technology, 2000 - 2002
- Visiting Professor, Technical University of Berlin, Germany, Institute of Ocean Engineering, Division of Naval Architecture and Ocean Engineering. Aug. 2010 - Oct. 2010 (on sabbatical leave)
- Visiting Professor at the Ocean Engineering Department of the Massachusetts Institute of Technology (MIT), Feb. 1992 - Aug. 1992 (on sabbatical leave)
- Visiting Researcher, Division of Ocean Engineering, RWTH - Aachen, July - August 1985.
- Member, Editorial Board "Journal for Underwater Technology", 1997 - 2002
- Member, Editorial Board "Journal of Marine Structures", 2007 -
- Member, Editorial Board, Journal of Marine Science and Engineering, Section Ocean Engineering, 2018 -
- Member, Committee V.7 - Slender Marine Structures, International Ship and Offshore Structures Congress (ISSC), 1988-1994.
- Member, Committee I.2 - Loads, International Ship and Offshore Structures Congress (ISSC), 1994-2000 and 2003-2009
- Member, Committee V.5 - Floating Production Systems, International Ship and Offshore Structures Congress (ISSC), 2000-2003.
- Member, Committee V.4 - Ocean Wave and Wind Energy Utilization, International Ship and Offshore Structures Congress (ISSC), 2009-2015.
- Member, Committee V.8 - Subsea Technology, International Ship and Offshore Structures Congress (ISSC), 2015-2018.
- Participant, Invited participation in an International Comparative Study on the Hydrodynamic Analysis of large floating production systems (FPS 2000) organized by Norsk-Hydro (Nov. 1989).

- Co-organizer and Scientific responsible of an International Comparative Study on the prediction of the mooring induced damping of floating structures in the framework of the I.2 Committee on Loads, ISSC'97
- Scientific responsible of the Working Group on the Efficiency of Floating Breakwaters, Technical Chamber of Greece (TEE), 1992-1995.
- Member, Working Group on Marine and Ocean Engineering, Technical Chamber of Greece, 1993-1995.
- Member, Short list of Experts of the Directorate General for Energy, Hydrocarbon Division, E.U., for providing service in the field of Energy.
- Member, Committee for the selection of technical personnel for the "Hellenic Shipyards S.A.", May 1999.
- Lecturer, in vocational seminars of the Greek Society of Naval Architects for young professionals on the subjects of "Hydrodynamic Characteristics of Marine Structures" and "Analysis and Design of Mooring Systems for Ships and Offshore Structures" (October 1989, 1990).
- Reviewer of International Journals, Conferences and Research Programs as follows:
Journal of Fluid and Structures, Energy, Journal of Engineering Mathematics, Journal of Ocean Engineering, Journal of Applied Ocean Research, Journal of Marine Structures, Journal of Marine Science and Technology, IEEE Journal of Oceanic Engineering, Journal of Engineering for the Maritime Environment, IET International Power Generation Journal, Journal of Offshore and Polar Engineering, Journal of Offshore Mechanics and Arctic Engineering, Scientific Journal of the Technical Chamber of Greece, IWWWFB2011, IWWWFB2012, IWWWFB2013, OMAE2014, OMAE2013, OMAE2012, OMAE2011, OMAE2010, OMAE2009, OMAE2008, OMAE2007, OMAE2006, OMAE2005, STAB2012 (11th International Conference on the Stability of Ships and Ocean Structures), EWTEC2007, EWTEC2009, EWTEC2011, EWTEC2013, ISOPE2012, ISOPE2011, ISOPE2010, ISOPE2008, ISOPE2007, ISOPE2006, ISOPE2005, ISOPE'92, ISOPE'96, IMAM2002, IMAEM1990, EUROMS 90, 3rd National Congress on Theoretical and Applied Mechanics, International Symposium on Computational Structures Technology (CST' 94), Reviewer of Research Programs for the Greek General Secretariat of Research and Development, Reviewer of Research Programs for the Greek Organization for Small and Medium Size Enterprises.
- Member of the evaluation committee for research programs supported by the Cypriot Research Fostering Foundation (2008 – 2009).
- Session Chairman in OMAE2005, OMAE2006, OMAE2008, OMAE2013, 7th European Wave and Tidal Energy Conference (EWTEC2009), 8th European Wave and Tidal Energy Conference (EWTEC2010), Offshore Mechanics and Polar Engineering (ISOPE' 92).
- Chairman, Committee for Doctoral Title Award, Department of Ocean Engineering, M.I.T., June 1992.

- Member, Committee for Award of the Honorary Doctoral Degree to the Professors Francis Ogilvie, M.I.T. and Horst Nowacki, Technical University of Berlin, 1996.
- Member, Steering Committee of the 25th West European Graduate Education in Marine Technology (WEGEMT) School on “Surface Support of Subsea Activities: Dynamics and Control in Extreme Environments”, University of Strathclyde, Department of Ship & Marine Technology, Sept. 1996.

7. TEACHING - INSTRUCTING

During my thirty-six-year tenure track as faculty member in the School of Naval Architecture and Marine Engineering of the National Technical University of Athens, I taught following graduate and post-graduate courses:

7.1 Graduate Courses

1. *"Design of Offshore Structures"*, 8th Semester of the Graduate Curriculum (1985 -). The Course has been introduced in the Graduate Course Program after my appointment (1984) with the School of Naval Architecture and Marine Engineering.
2. *"Structural Vibrations of the Ship Hull"*, 7th Semester of the Graduate Course Program, School of Naval Architecture and Marine Engineering (1984 - 1992).
3. *'Special Topics of the Offshore Structures Design'*, 9th Semester of the Graduate Course Program, School of Naval Architecture and Marine Engineering (1993 - 2003).
4. *"Moorings for Floating Structures"*, 9th Semester of the Graduate Course Program, School of Naval Architecture and Marine Engineering (2004-).
5. *"Dynamics of Marine Structures"*, 6th Semester (1999)

7.2 Post - Graduate Courses

In the Academic Year 1998 - 1999 the Post-Graduate Program in "Marine Technology and Science" has been inaugurated. The program is leaded by the School of Naval Architecture and Marine Engineers, NTUA. Since its commencement, I am servicing as elected Director of the Program (1998 - 2018) and President of its interdepartmental scientific and management committee (2018 - 2020).

I taught following courses in the above Post-Graduate Course

1. *"Environmental Conditions and Sea Loads on Marine Structures"*, Compulsory Course, 1st Semester, 4.5hrs/week
2. *"Hydromechanic Analysis and Optimal Mooring Design of Moored Floating Structures"*, Elective Course, 2nd Semester, 3hrs/week
3. *"Seminars on recent Developments in Marine and Underwater Technology"*, Elective Course, 2nd Semester, 3hrs/week
4. *"Non-Conventional Harbor Works"*, elective course, 3rd Semester, 3hrs/week
5. *"Wave Energy Devices"*, elective course, 3rd Semester, 3hrs / week.

7.3 Supervision of PhD Theses

1. Chatjigeorgiou, I.K.: *"Methods for the non-linear dynamic analysis of wire and synthetic mooring lines under low and high pretension"*, Finished 1997.
2. Bourma, P.: *"Design of an autonomous underwater vehicle advancing with changing of buoyancy"*, Finished, 2010.
3. Mazarakos, Th.: *"Second – order exciting wave forces and wave drift damping on floating structures advancing with small forward speed in waves"*, Finished, 2010.
4. Konispoliatis, D.: *"Hydrodynamic analysis of floating oscillating water column devices for the wave energy exploitation in the open sea"*, Finished, April 2014.
5. Zilakos, I.K.: *"Material modelling of rubber coated fabrics employed in the design of innovative ship rescue systems"*, Finished, May 2018
6. Katsaounis, G.: *"Structural dynamic analysis of flexible marine risers under bending and torsion loading"*, On-going.

7.4 Supervision of Diploma / Master Theses

Instructor in 72 Diploma / Master Theses in the National Technical University of Athens (3 on – going)

8. RESEARCH ACTIVITIES

During my thirty - five involvement in topics related to the research area of ocean engineering / offshore structures, my research activities focused on the following research topics:

1. *Development of theoretical and experimental methods and computer software for the hydrodynamic analysis and design of offshore structures*
 - 1.1 Analytical methods for the solution of the linear diffraction and radiation problems for arbitrarily shaped single or multiple interacting bodies of revolution with vertical symmetry axis. Evaluation of the wave loads, motions, hydrodynamic parameters, mean second-order wave loads.
 - 1.2 Singularity distribution methods for the numerical solution of the body - wave interaction problem for arbitrarily shaped single- or multiple interacting marine structures and evaluation of the wave loads, motions and mean second – order forces
 - 1.3 Analytical solution of the time-dependent second-order sum- and difference-frequency body – wave interaction problem for arbitrarily shaped bodies of revolution with vertical symmetry axis
 - 1.4 Development of fast methods and numerical tools for the evaluation of the dynamic behavior of semi-submersibles in waves (method of hydrodynamic synthesis)

- 1.5 Analytical methods for the hydrodynamic analysis of independently moving concentric vertical cylinders
- 1.6 Evaluation of the mean second-order wave drift forces for slowly advancing single- and multiple interacting bodies in waves and calculation of the associated second – order wave-drift damping.
- 1.7 Analytical solution of the body-wave-current interaction for the case of vertical cylinders.
- 1.8 Hydrodynamic analysis of interconnected floating structures and evaluation of the motions, shear forces and moments at the connection points.

The research work describer above (section 8.1), found applications in:

- ✓ The hydrodynamic analysis and design of several types of floating structures (semi – submersibles, jack – ups, floating hydrocarbon storage terminals, pipe – laying vessels, etc), see chapter 10, research programs # 1, 2, 4, 11, 15, 19, 21, 24, 26, 27, 28, 29, and chapter 11 consulting activities #5, 11, 14, 15, 16
 - ✓ The hydrodynamic analysis and design of floating marinas, floating piers, floating parking stations, floating breakwaters, see chapter 10, research programs #7, 10, 14 and chapter 11 consulting activities #1, 6.
 - ✓ The analysis and design of fishing cages for the open sea (see chapter 11, consultant activities #2)
 - ✓ The analysis of the flow field and the directional stability during towing operations of ships in the Corinth Channel (see chapter 11, consultant activities # 10).
2. *Development of theoretical methods and numerical tools for the static and dynamic analysis and the optimum design of single and multi-leg mooring systems*
 - 2.1 Mooring lines made of wire or / and chain with attached submerged buoys for applications in the open sea and in large depth (see chapter 10, research programs #5, 6, 8, and chapter 11 consultant activities# 3, 4).
 - 2.2 Mooring systems made of synthetic fibers with low and high pretension
 - 2.3 Moorings for oceanographic buoys in harsh marine environment (see publication #26, chapter 9.1.3 of the present CV).
 3. *Coupled hydromechanic analysis of single- and / or multi-use moored floating marine structures*
 - 3.1 Motion response analysis in the frequency- and the time-domain by accounting of the dynamics of the mooring lines and the dynamics of the floater;

3.2 Evaluation of the slowly-varying resonant motions of the moored structure.

3.3 Evaluation of the mooring-line induced damping

The research work describer above (section 8.3), found applications in:

- ✓ The coupled motion response analysis of interconnected floating structures (chapter 10, research program #24, and chapter 11 consultant activities #12)
- ✓ The analysis of the motion response of moored ships and floating structures (chapter 10, research programs #11, 12,, chapter 11, consultant activity #17).

4. *Coupled hydro-aero-elastic analysis of floating Wind Turbines*

4.1 Coupled analysis in the frequency and the time domain by accounting of the dynamics of the floater, the aero-elastic analysis of the W/T and the dynamics of the mooring lines (concepts based on the TLP principle, multi-leg conventionally moored SPAR Buoy systems).

The research work describer above (section 8.4), found applications in:

- ✓ The hydromechanic analysis and design of floating wind parks (evaluation of the loads and motions due to the wave, wind and current action, analysis and design of the station keeping system), see chapter 11, consultant services #8 and 9.
- ✓ The coupled hydro – aero – elastic analysis of fixed or floating offshore wind turbines (chapter 10, research programs #31, 32, 33, 34, 35).

5. *Numerical and experimental analysis and efficiency evaluation of several types of wave energy devices*

5.1 Approximate (point absorber) and exact analytical methods (solution of the diffraction and radiation problems for the WEC) for the evaluation of the absorbed wave energy.

5.2 Single or array arrangements

5.3 Analysis and efficiency's evaluation of floating oscillating water column (OWC's) devices

The research work describer above (section 8.5), found applications in the research programs # 9, 17, 20, 22, 23 and 30 (see chapter 10) and 7 (chapter 11).

6. *Sloshing of liquids in arbitrarily shaped bodies of revolution with vertical symmetry axis*

(see research program # 3, chapter 10).

7. *Wave propagation in harbors and evaluation of the dynamic behavior of moored vessels in harbors.*

(see consulting service #13, chapter 11 of the present CV).

8. *Hydrodynamic analysis and design of oceanographic devices*
 - 8.1 Hydrodynamic analysis and design of a glider for oceanographic applications (see chapter 10, research program # 25)
 - 8.2 Hydrodynamic analysis and design of oceanographic surface buoys for harsh marine environment (see publication #26, chapter 9.1.3 of the present CV)

In addition, the following research collaborations – initiatives belonging to the broader field of Ocean Engineering are worthwhile to be mentioned:

1. With the Ocean Engineering Department of the Massachusetts Institute of Technology (MIT) and the Woodshole Oceanographic Institution during my sabbatical leave as Visiting Assoc. Professor at MIT (Febr. 1992 – August 1992). During this stay the publication entitled: “Design of oceanographic surface moorings for harsh weather environments” was elaborated, Transactions S.N.A.M.E., 103, 1995, co-authored by M. Grosenbauch of the Woodshole Oceanographic Institute (see publication 23, chapter 9.1).
2. With the National Center for Marine Research (NCMR) in the framework of: (a) the Post-Graduate Course in Marine and Ocean Engineering and Science, in which NCMR participates, and (b) a Research Program sponsored by the Greek General Secretariat for Research and Technology (program PENED 2003), dealing with the “Design of an autonomous underwater oceanographic monitoring vehicle advancing by changing buoyancy” (Chapter 10, program #25). Some first results of this research activity have been presented in the publication entitled: “Research and Development of an autonomous underwater glider: Modelling, Design and Control”, *1st International Workshop on Underwater Vehicles*, March 2009, National Center for Marine Research, Anavissos, Greece (see publication 91, chapter 9.2.4).
3. With the National Center for Marine Research (NCMR) and MIT in the framework of a research program of the Marine Archaeological Department of the Greek Ministry for Culture (see research program #18, chapter 10), dealing with the imaging of the seabed in the Lefka bay in the Island of Nisiros, using autonomous underwater vehicles (AUV's).

9. LIST OF PUBLICATIONS

9.1 *In refereed international Journals*

9.1.1. *Publications related to the scientific area of offshore hydrodynamics*

1. Mavrakos, S.A., "Wave loads on a stationary floating bottomless cylindrical body with finite wall thickness", *Applied Ocean Research*, **7**(4), 1985, 213-224.
2. Kokkinowrachos, K., Mavrakos, S.A., Asorakos, S., "Behavior of vertical bodies of revolution in waves", *Ocean Engineering*, **13**(6), 1986, 505-538.
3. Mavrakos, S.A., Koumoutsakos, P., "Hydrodynamic interaction among vertical axisymmetric bodies restrained in waves", *Applied Ocean Research*, **9**(3), 1987, 128-140.
4. Mavrakos, S.A., "Hydrodynamic Coefficients for a thick-walled bottomless cylindrical body floating in water of finite depth", *Ocean Engineering*, 1988, **15**(3), 213-229.
5. Mavrakos, S.A., "The vertical drift force and pitch moment on axisymmetric bodies in regular waves", *Applied Ocean Research*, 1988, **10**(4), 207-218.
6. Mavrakos, S.A., "Hydrodynamic coefficients for groups of interacting vertical axisymmetric bodies", *Ocean Engineering*, **18**(5), 1991, 485-515.
7. Mavrakos, S.A., "Hydrodynamic characteristics of floating toroidal bodies", *Ocean Engineering*, **24**(4), 1997, 381-399.
8. Mavrakos, S.A. "Hydrodynamic coefficients in heave of two concentric surface-piercing truncated circular cylinders", *Applied Ocean Research*, **26** (3-4), 2004, 84-97.
9. Chatjigeorgiou, I. K., Mavrakos, S.A. "Semi-Analytical Formulation of the Second - Order Wave Diffraction by a Truncated - Compound Surface - Piercing Cylinder", *Journal of Ship Technology Research (Schiffstechnik)*, **53**, 2006, 26 - 38.
10. Mavrakos, S.A., Chatjigeorgiou, I.K. "Second - Order Diffraction by a Bottom - Seated Compound Cylinder", *Journal of Fluids and Structures*, **22**(3), 2006.
11. Chatjigeorgiou, I.K., Mavrakos, S.A. "Second-order sum-frequency wave diffraction by a truncated surface-piercing cylinder in bi-chromatic waves", *Journal of Marine Science and Technology*, **12**(4), 2007, 218 - 231.
12. Mavrakos, S.A., Chatjigeorgiou, I.K. "Second-order hydrodynamic effects on an arrangement of two concentric truncated vertical cylinders", *Marine Structures*, **22**(3), 2009, 545 - 575.
13. Chatjigeorgiou, I.K., Mavrakos, S.A. "An analytical approach for the solution of the hydrodynamic diffraction by arrays of elliptical cylinders", *Applied Ocean Research*, **32**, 2010, 242 - 251.
14. Chatjigeorgiou, I.K., Mavrakos, S.A. "The analytic form of Green's function in elliptic coordinates for the hydrodynamic diffraction by an

- elliptical cylinder", *Journal of Engineering Mathematics*, 2011
<http://dx.doi.org/10.1007/s10665-011-9464-6>
15. Fonseca, N., Pessoa, J., Mavrakos, S.A., Le Boullec, M. "Experimental and numerical investigation of the slowly varying wave exciting drift forces on a restrained body in bi-chromatic waves", *Ocean Engineering*, **38**, 2011, p. 2000-2014, <http://dx.doi.org/10.1016/j.oceaneng.2011.09.017>
 16. Mazarakos, T. P., Mavrakos, S.A. "Wave-Current interaction on a vertical truncated cylinder floating in finite depth waters", *Journal of Engineering for the Maritime Environment*, 227(3), 243 – 255, Article first published online: September 24, 2012; Issue published: August 1, 2013
<http://dx.doi.org/10.1177/1475090212454096>
 17. Konispoliatis, D., Mavrakos, S.A., Katsaounis, G. "Theoretical Evaluation of the Hydrodynamic Characteristics of Arrays of Vertical Axisymmetric Floaters of Arbitrary Shape in front of a Vertical Breakwater", *Journal of Marine Science and Engineering*, 2020, 8, 62;
<http://dx.doi.org/10.3390/jmse8010062>
 18. Konispoliatis, D., Chatjigeorgiou, I.K., Mavrakos, S.A. "Near trapped wave phenomena in an array of truncated cylinders in a perpendicular arrangement in front of a vertical breakwater", *Journal of Applied Mathematical Modelling*, Vol. 83, 2020, pp. 497–525,
<https://doi.org/10.1016/j.apm.2020.03.005> 0307-904
 19. Konispoliatis, D., Mavrakos, S.A. "Theoretical Analysis of a vertical cylindrical floater in front of an orthogonal breakwater", *Fluids*, Vol. 5, 2020, <https://doi.org/10.3390/fluids5030135>
 20. Konispoliatis, D., Mavrakos, S.A. "Mean Drift Forces on Vertical Cylindrical Bodies placed in Front of a Breakwater", *Fluids*, Vol. 5, 2020,
<https://doi.org/10.3390/fluids5030148>
 21. Konispoliatis, D., Chatjigeorgiou, I.K., Mavrakos, S.A. "Theoretical Hydrodynamic Analysis of a Surface-Piercing Porous Cylindrical Body", *Fluids*, 2021, 6, 320. <https://doi.org/10.3390/fluids6090320>
 22. Konispoliatis, D., Mavrakos, S.A. "Hydrodynamics of a free-floating cylinder in front of an orthogonal vertical wall", *Ship Technology Research – Schiffstechnik*, Published on line 14 October 2021,
<https://doi.org/10.1080/09377255.2021.1990466>
 23. Mavrakos, A.S., Konispoliatis, D.N., Ntouras, D.G., Papadakis, G.P., Mavrakos, S.A. "Hydrodynamics of Moonpool-Type Floater: A Theoretical and a CFD Formulation", *Energies*, 2022, 15, 570,
<https://doi.org/10.3390/en15020570>
 24. Konispoliatis, D.N., Chatjigeorgiou, I.K., Mavrakos, S.A. "Hydrodynamics of a Moored Permeable Vertical Cylindrical Body", *Journal of Marine Science and Engineering*, 2022, 10, 403,
<https://doi.org/10.3390/jmse100304033>
 25. Mavrakos, A.S., Konispoliatis, D.N., Mavrakos, S.A. "Hydrodynamic Analysis of Two Coaxial Moonpool Floaters Using Theoretical Methodologies", *Journal of Marine Science and Engineering*, 2023, 11,99,
<https://doi.org/10.3390/jmse11010099>

9.1.2 Publications related to the hydrodynamic analysis and evaluation of the efficiency of devices and marine systems for the exploitation of offshore renewable energy sources

26. Mavrakos, S.A., Kalofonos, A., "Optimum power absorption by arrays of interacting vertical axisymmetric wave-energy devices", *Journal of Offshore Mechanics and Arctic Engineering*, **119**, 1997, 244 – 251.
27. Mavrakos, S.A., McIver, P., "Comparison of Methods for computing hydrodynamic characteristics of arrays of wave power devices", *Applied Ocean Research*, **19**, 1997, 283-291.
28. Mavrakos, S.A., Katsaounis, G., "Effects of floater's Hydrodynamics on the performance of tightly moored wave energy converters", *Journal IET Renewable Power Generation*, **4**(6), 2010, 531 – 544, <http://dx.doi.org/10.1049/iet-rpg.2009.0191>
29. Mavrakos, S.A., Konispoliatis, D., "Hydrodynamics of a free floating vertical axisymmetric oscillating water column device", *Journal of Applied Mathematics*, Special issue in "Mathematical Modeling of Marine Structures", Volume 2012, Article ID 142850, <http://dx.doi.org/10.1155/2012/142850>
30. Konispoliatis, D., Mavrakos, S.A. "Hydrodynamic Analysis of an Array of Interacting Free - Floating Oscillating Water Column (OWC's) Devices", *Ocean Engineering*, Vol. 111, 2016, 179 – 197, <http://dx.doi.org/10.1016/j.oceaneng.2015.10.034>
31. Konispoliatis, D., Mazarakos, T. Mavrakos, S.A. "Hydrodynamic Analysis of three-unit Array of Floating Annular Oscillating Water Column Wave Energy Converters", *Applied Ocean Research Engineering*, Vol. 61, 2016, 42 – 64, <http://dx.doi.org/10.1016/j.apor.2016.10.003>
32. Soukissian, T.H., Denaxa, D., Karathanasi, F., Prospathopoulos, A., Sarantakos, K., Iona, A., Georgantas, K., Mavrakos, S.A. "Marine Renewable Energy in the Mediterranean Sea: Status and Perspectives, Review Article, *Energies*, 2017, Vol. 10(10), 1512, <http://doi.org/10.3390/en10101512>
33. Konispoliatis, D.N., Mavrakos, S.A. "Natural frequencies of vertical cylindrical oscillating water column devices", *Journal Applied Ocean Research*, Vol.91, 2019, <https://doi.org/10.1016/j.apor.2019.101894>
34. Konispoliatis, D.N., Mavrakos, S.A. "Theoretical performance investigation of a vertical cylindrical oscillating water column device in front of a vertical breakwater", *Journal of Ocean Engineering and Marine Energy*, 2019, Vol. 5, <http://doi.org/10.1007/s40722-019-00147-6>
35. Mazarakos, Th., Konispoliatis, D., Katsaounis, G., Polyzos, S., Manolas, D., Voutsinas, S., Soukissian, T., Mavrakos, S.A. "Numerical and experimental studies of a multi – purpose floating TLP structure for combined wind and wave energy exploitation", *Journal of Mediterranean*

- Marine Science*, Vol. 20(4), **2019**, pp.745 – 763,
<http://dx.doi.org/10.12681/mms.19366>
36. Konispoliatis, D., Mavrakos, S.A., “Wave power absorption by arrays of wave energy converters in front of a vertical breakwater: A theoretical study”, *Energies* **2020**, 13 ; <http://dx.doi.org/10.3390/en13081985>
 37. Konispoliatis, D., Mavrakos, S.A. “Hydrodynamic Efficiency of a Wave Energy Converter in Front of an Orthogonal Breakwater», *J. Marine Science and Engineering*, **2021**, 9, 94, <https://dx.doi.org/10.3390/jmse9010094>
 38. Konispoliatis, D.N., Katsaounis, G.M., Manolas, D.I., Soukissian, T.H., Polyzos, S., Mazarakos, T.P., Voutsinas, S.G., Mavrakos, S.A. “REFOS: A Renewable Energy Multi-Purpose Floating Offshore Systems”, *Energies* **2021**, 14, <https://doi.org/10.3390/en14113126>
 39. Konispoliatis, D., Mavrakos, S.A., “Diffraction and Radiation of Water Waves by a Heaving Absorber in Front of a Bottom-Mounted, V-Shaped Breakwater of infinite length”, *J. Mar. Science and Engineering*, **2021**, 9, 833, <https://doi.org/10.3390/jmse9080833>
 40. Konispoliatis, D.N., Mavrakos, A.S., Mavrakos, S.A., “Efficient Properties of Different Types of Wave Energy Converters Placed in Front of a Vertical Breakwater”, *International Journal for Offshore and Polar Engineering*, **2022**, 32 (2), <https://doi.org/10.17736/ijope.2022.mm27>
 41. Mazarakos, T.P., Tsaousis, T.D., Mavrakos, S.A., Chatjigeorgiou, I.K. “Analytical investigation of tension loads acting on a TLP floating wind turbine”, *Journal of Marine Science and Engineering*, **2022**, 10, 318. <https://doi.org/10.3390/jmse10030318>
 42. Konispoliatis DN, Manolas DI, Voutsinas SG and Mavrakos SA, Coupled Dynamic Response of an Offshore Multi-Purpose Floating Structure Suitable for Wind and Wave Energy Exploitation, 2022, *Front. Energy Res.* 10:920151, <https://doi.org/10.3389/ferng.2022.920151>
- 9.1.3 *Publications related to the static and dynamic analysis and optimum design of mooring systems and slender marine structures-Applications*
43. Papazoglou, V.J., Mavrakos, S.A. and Triantafyllou, M., “Nonlinear Cable Response and Model Testing in Water”, *Journal of Sound and Vibration*, **140**(1), 1990, 103-115.
 44. Mavrakos, S.A., Papazoglou, V.J., Triantafyllou, M.S., Chatjigeorgiou, J., “Deep Water Mooring Dynamics”, *Marine Structures*, **9**, 1996, 181-209.
 45. Grosenbauch, M.A., Mavrakos, S.A., “Design of oceanographic surface moorings for harsh-weather environments”, *Transactions S.N.A.M.E.*, **103**, 1995.
 46. Mavrakos, S.A., Chatjigeorgiou, J., “Dynamic behavior of deep water mooring lines with submerged buoys”, *Computers and Structures*, **64** (1 – 4), 1997, 819 – 835. DOI: [10.1016/s0045-7949\(96\)00169-1](https://doi.org/10.1016/s0045-7949(96)00169-1)
 47. Brown, D.T., Mavrakos, S.A., “Comparative Study on Mooring Line Dynamic Loading”, *Marine Structures*, **12** (3), 1999, 131-151.

48. Chatjigeorgiou, I.K., Mavrakos, S.A., "Comparative evaluation of numerical schemes for 2D mooring dynamics", *International Journal of Offshore and Polar Engineering*, **10**(4), 2000, 301-309.
49. Chatjigeorgiou, I.K., Mavrakos, S.A., "Dynamic Behavior of a Marine Cable Under Snap-Loading Conditions", *Journal of Ship Technology Research, Schiffstechnik*, **48**, 2001, pp.171-180.
50. Chatjigeorgiou, I.K., Mavrakos, S.A., "Bounded and Un-bounded Coupled Transverse Response of Parametrically Excited Vertical Marine Risers and Tensioned Cable Legs for Marine Applications", *Applied Ocean Research*, 2003, **24**(6), pp. 341-354.
51. Chatjigeorgiou, I.K., Mavrakos, S.A., "Coupling Instabilities for Marine Slender Structures with Applications to Elastic Risers and Cables", *Journal of Ship Technology Research, Schiffstechnik*, 2005, **52**(1), 2 - 13.
52. Chatjigeorgiou, I.K. and Mavrakos, S.A., "Nonlinear resonances of parametrically excited risers-numerical and analytic investigation for $\Omega=2\omega_1$ ", *Journal of Computers and Structures*, 2005, **83**(8-9), 560 - 573.
53. Stavrou, D.I., Ventikos, N.P., Mavrakos, S.A.: "Application of FIS Methodology to Risk Failure Estimation of LNG Transfer Loading Arms in Side-by-Side Configuration", *International Journal for Offshore and Polar Engineering*, 2017, **27**(3), 266 - 273.

9.2 In refereed international Conferences

9.2.1 Publications Related to the scientific area of offshore hydrodynamics

1. Kokkinowrachos, K., Bardis, L., Mavrakos, S.A., "Drift forces on one and two-body structures in waves", Proceedings, *3rd International Conference on the Behaviour of Offshore Structures (BOSS'82)*, Hemisphere Publishing Co., New York, 1982, Vol. 1, 467-489.
2. Bardis, L., Mavrakos, S.A., "Hydrodynamic analysis of large offshore units", Proceedings, *IIIrd I.M.A.E.M. International Congress on Marine Technology*, Athens, Greece, June 1984, 505-513.
3. Mavrakos, S.A., Bardis, L., "Hydrodynamic analysis of floating solar ponds", Proceedings, *Marine Computers' 86*, The Society of Naval Architects and Marine Engineers (S.N.A.M.E.), MIT, Cambridge, U.S.A., 1986, 24.1-24.12.
4. Mavrakos, S.A., Bardis, L., Balaskas, C., "Horizontal and vertical drift forces on axisymmetric bodies in regular waves", Proceedings, *4th I.M.A.E.M. International Congress on Marine Technology*, Varna, Bulgaria, June 1987, 27.1-27.8.
5. Mavrakos, S.A., Bardis, L., Peponis, V., "A hybrid integral equation method for the wave diffraction around large bodies", Proceedings, *2nd National Symposium on Theoretical and Applied Mechanics*, Athens, Greece, June 1989.
6. Mavrakos, S.A., Peponis, V., "Hydrodynamic characteristics of single and multi-component large structures floating in waters of variable

- depth", *5th IMAEM International Congress on Marine Technology*, Athens, May 1990, 267-271.
7. Mavrakos, S.A., Peponis, V., "Second-order slowly-varying forces on axisymmetric bodies restrained in irregular waves", *Proceedings, 3rd National Symposium on Theoretical and Applied Mechanics*, Athens, Greece, June 1992.
 8. Mavrakos, S.A., Peponis, V., "Sum- and difference frequency loads on axisymmetric bodies restrained in irregular waves", *Proceedings, 2nd International Offshore and Polar Engineering Conference (ISOPE'92)*, San Francisco, U.S.A., June 1992, Vol. III, 546-553.
 9. Mavrakos, S.A., "Hydrodynamic characteristics for groups of interacting axisymmetric bodies submerged near the sea surface or the sea bed", *Proceedings, 3rd International Offshore and Polar Engineering Conference (ISOPE'93)*, Singapore, June 1993.
 10. Mavrakos, S.A., Grigoropoulos, G., "Numerical and experimental prediction of wave loads on vertical cylinders", *Proceedings, 5th International Conference on Hydraulic Engineering Software (HYDROSOFT'94)*, Computational Mechanics Publications, Porto Carras, Greece, 1994, Vol. 2, 115-122.
 11. Mavrakos, S.A., "Mean drift loads on multiple vertical axisymmetric bodies in regular waves", *Proceedings, 5th International Offshore and Polar Engineering Conference (ISOPE'95)*, The Hage, The Netherlands, 1995, Vol. 3, 547-555.
 12. Mavrakos, S.A., "The scattered wave field by vertical cylinders in a narrow tank", *Proceedings, 4th National Symposium on Theoretical and Applied Mechanics*, Xanthi, Greece, 1995, Vol II, 819-829.
 13. Mavrakos, S.A., "Diffraction loads on arrays of truncated hollow cylinders", *Proceedings, 1st International Conference on Marine Industry (MARIND' 96)*, Varna Bulgaria, 1996, Vol. III, 91-105.
 14. Grigoropoulos, Gr., Mavrakos, S.A., Loukakis, T., "On the wave breaking efficiency of an array of floating vertical cylinders", *Proceedings, 6th International Symposium on Offshore and Polar Engineering (ISOPE'96)*, Los Angeles, 1996, Vol. III, 587-594.
 15. Mavrakos, S.A., "Wave loads on large-volume offshore structures", *Proceedings, 13th International Ship and Offshore Structures Congress (ISSC'97)*, Trondheim, Norway, 1997, Vol. 1, 313-324.
 16. Mavrakos, S.A., "Wave loads on large-volume offshore structures", *Proceedings, 14th International Ship and Offshore Structures Congress (ISSC'97)*, Nagasaki, Japan, 2000, Vol. 1.
 17. Mavrakos, S.A., Chatjigeorgiou, I.K., Grigoropoulos, G. and Maron A., "Scale Experiments for the Measurement of Motions and Wave Run-Up on a TLP Model, Subjected to Monochromatic Waves", *Proceedings, International Conference of Offshore and Polar Engineering (ISOPE 2004)*, 2004, Toulon, France.
 18. Mavrakos, S.A., Chatjigeorgiou, I.K. and Lentziou, D. "Wave Run-up and Second-order Wave Forces on a Truncated Circular Cylinder due to

- Monochromatic Waves”, Proceedings, 24th Int. Conf Offshore Mechanics and Arctic Engineering (OMAE 2005), Paper#67104, Halkidiki, Greece, 2005.
19. Chatjigeorgiou, I.K., and Mavrakos, S.A. “Second-order diffraction by a surface piercing truncated compound cylinder”, Proc 11th Int. Maritime Association of the Mediterranean Conf, IMAM 2005, Lisboa, Portugal.
 20. Mavrakos, S.A. “Hydrodynamic characteristics of two concentric surface – piecing floating circular cylinders”, Proceedings, 11th Int Maritime Association of the Mediterranean Conf, IMAM 2005, Lisboa, Portugal.
 21. Mavrakos, S.A., Chatjigeorgiou, I.K. “Second-order diffraction by two concentric truncated cylinders, Proceedings, 21st International Workshop on Water Waves and Floating Bodies, Loughborough, U.K. 2006.
 22. Chatjigeorgiou, I.K., Mavrakos, S.A., Xiros, N., ‘Wave-current interaction with a vertical cylinder in cross flow: a semi-analytical approach”, Proceedings, 8th International Conference on Computational Structures Technology, Las Palmas de Gran Canaria, 2006, Spain
 23. Mavrakos, S.A., “Computational Methods for Fixed and Floating Structures and Mooring and Cable Systems”, Chapters 3.1 and 3.2 in Loads’ Technical Committee Report, Proceedings, 19th International Ship and Offshore Structures Congress (ISSC’06), Southampton, U.K. 2006.
 24. Chatjigeorgiou, I.K., Mavrakos, S.A. “A semi-analytical formulation for the wave-current interaction problem with a vertical bottom-seated cylinder including square velocity terms”, 22nd International Workshop on Water Waves and Floating Bodies, Plitvice, Croatia, 2007
 25. Mavrakos, S.A., Chatjigeorgiou, I.K., Mazarakos, T., Thanos, I. “Second – order wave drift damping in hydrodynamically interacting large bodies”, Proceedings, International Conference of Offshore and Polar Engineering (ISOPE 2007), 2007, Lisbon, Portugal, pp. 2142-2149.
 26. Chatjigeorgiou, I.K., Mavrakos, S.A., “Second-order hydrodynamic resonances on a compound truncated cylinder floating near the free surface”, 26th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2007), June 10 -15, 2007, San Diego, California, USA.
 27. Chatjigeorgiou, I.K., Mazarakos, T.P., Mavrakos, S.A., “First - order hydrodynamic loading and wave drift damping by a bottom- seated cylinder in a wave-current co existing field”, Proceedings, 8th National Symposium on Theoretical and Applied Mechanics, 2007, Patra, Greece, 215 – 222.
 28. Bourma, P., Thanos, I., Chatjigeorgiou, I.K., Mavrakos, S.A., “Slowly – varying motions of two interconnected floating structures considered as a two degree of freedom oscillator”, 8th National Symposium on Theoretical and Applied Mechanics, 2007, Patra, Greece, 223 - 230.
 29. Chatjigeorgiou, I.K., Mavrakos, S.A., “The second-order diffraction – radiation problem for a piston – like arrangement”, Proceedings, 8th

- International Conference on Hydrodynamics*, pp. 381 – 389, 2008, Nantes, France.
30. Chatjigeorgiou, I.K., Mavrakos, S.A., “Hydrodynamic diffraction by multiple elliptical cylinders”, *Proceedings, 24th International Workshop on Water Waves and Floating Bodies*, 2009, Zelenogorsk, Russia.
 31. Chatjigeorgiou, I.K., Mavrakos, S.A., “Wave elevation between elliptical structures”, *Proceedings, 28th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2009)*, Paper No: OMAE2009-80187, 2009, Honolulu, Hawaii, 31 May – 5 June, USA.
 32. Mavrakos, S.A., “Computation of wave – induced loads in multi – body interactions, body – wave – current interactions and cables, risers and moored structures”, Chapters 2.1.3, 2.1.4 and 4.1 in *Loads’ Technical Committee Report, Proceedings, 20th International Ship and Offshore Structures Congress (ISSC’09)*, Seoul, Korea. 2009.
 33. Mavrakos, S.A., Mazarakos, Th. “Numerical and experimental investigation of first- and second-order wave loads on a four cylinder configuration at small horizontal drift velocity”, *4th International Workshop on Water Waves*, 1-2 October 2009, Berlin, Germany.
 34. Chatjigeorgiou, I.K., Mavrakos, S.A., “The two dimensional Green’s function in elliptic coordinates”, *Proceedings, 25th International Workshop on Water Waves and Floating Bodies*, 2010, Harbin, China.
 35. Mavrakos, S.A., Mazarakos, Th., Konispoliatis, D., “First- and second-order hydrodynamic effects and wave run-up on a four cylinder configuration at small forward speed’, *Proceedings, 9th HSTAM International Congress on Mechanics*, 2010, 12-14 July, Limassol, Cyprus.
 36. Mavrakos, S.A., Konispoliatis, D., Mazarakos, Th., “Hydrodynamics of Concentric Cylinders’, *Proceedings, 5th International Workshop on Water Waves*, 30 Sept. - 1 Oct. 2010, Berlin, Germany.
 37. Mavrakos S. A., Chatjigeorgiou I. K., Mazarakos T. P., Konispoliatis D., Maron A.: “Hydrodynamic forces and wave run-up on concentric vertical cylinders forming piston-like arrangements”, *26th International Workshop on Water Waves and Floating Bodies (IWWWFB2011)*, April 17-20, 2011, Athens, Greece.
 38. Clauss, G.F., Mavrakos, S.A., Sprenger, F., Testa, D.: “Hydrodynamic Considerations for FLNG Concepts”, *Proceedings, 30th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2011)*, Paper No: OMAE2011-50132, Rotterdam, The Netherlands, 19 - 24 June 2011
 39. Mavrakos, S.A., Chatjigeorgiou, I.K.: “Hydrodynamic exciting forces on immersed prolate spheroids”, *Proceedings, 27th International Workshop on Water Waves and Floating Bodies (IWWWFB2012)*, April 22 - 25, 2012, Copenhagen, Denmark.
 40. Tzabiras, G., Katsaounis, G.M., Papakonstantinou, V., Mavrakos, S.A.: “Viscous Flow Calculations around transverse sections of a floating LNG storage terminal in heave and roll motions”, *Proceedings, 22nd International Offshore (Ocean) and Polar Engineering Conference (ISOPE 2012)*, June 17-22, 2012, Rhodes, Greece

41. Chatjigeorgiou, I.K., Mavrakos, S.A., Mazarakos, T.P.: "Exciting wave forces on submerged prolate spheroidal bodies in infinite water depth", Proceedings, 11th International Conference on the Stability of Ships and Ocean Vehicles", 23-28 September, 2012, Athens, Greece.
42. Chatjigeorgiou, I.K., Mavrakos, S.A., Miloh, T.: "On the wave resistance of an immersed prolate spheroid in infinite water depth", Proceedings, 28th International Workshop on Water Waves and Floating Bodies (IWWWFB2013), April 7 - 10, 2013, L' Isle sur la Sorgue, France.
43. Chatjigeorgiou, I.K., Dassios, G., Mavrakos, S.A. & Miloh, T.: "A Semi-analytic formulation for the Hydrodynamic Diffraction by Submerged Ellipsoids", Proceedings, 29th International Workshop on Water Waves and Floating Bodies (IWWWFB2014), March 30 - April 4,, 2014, Osaka, Japan.
44. Katsardi, V., Grammenos, Th., Katifeoglou, S., Mavrakos, S.A., Chatjigeorgiou, I.K.: "Hydrodynamic loading and wave run - up on "elliptical" breakwaters", Proceedings, 25th International Offshore (Ocean) and Polar Engineering Conference (ISOPE 2016), June 26 - July 2, Rhodes, Greece.
45. Mavrakos, S.A., Chatjigeorgiou, I.K., Konispoliatis, D.N.: "Wave Diffraction of Vertical Truncated Cylindrical Bodies", 37th International Conference on Ocean, Offshore & Arctic Engineering (OMAE 2018), June 17-22, 2018, Madrid, Spain
46. Mazarakos, T.P., and S.A. Mavrakos, S.A.: "Second Order Wave Drift Damping of a TLP floating structure concept for combined wind and wave energy exploitation", Proceedings, 3rd International Conference on Renewable Energies Offshore (RENEW2018), 8 - 10 October 2018, Lisbon, Portugal.
47. Mavrakos, S.A., Chatjigeorgiou, I.K., Konispoliatis, D.N.: "Trapping phenomena by an array of vertical bottomless cylindrical bodies, Proceedings, 3rd International Conference on Renewable Energies Offshore (RENEW2018), 8 - 10 October 2018, Lisbon, Portugal.
48. Mazarakos, T.P., Mavrakos, S.A.: "First- and second-order hydrodynamic loading on a three cylinder configuration for oil and gas activities", Proceedings, 12th International Conference on Deregulated Electricity Market Issues in South Eastern Europe (DEMSEE 2018), September 20-21, 2018, Nicosia, Cyprus
49. Mazarakos T.P., Konispoliatis, D.N., Soukisian, T., Mavrakos S.A., D. Manolas, D., Voutsinas, S.: "Significant and Maximum Loads of a Multi-Purpose Floating Structure due to Environmental Conditions in the Aegean Sea", Proceedings, 12th Panhellenic Symposium on Oceanography & Fisheries, 30 May - 3 June, 2018, Corfu, Greece.
50. Mazarakos, T.P., Konispoliatis, D.N, Mavrakos, S. A. "Loads on the brace system of an offshore floating structure", 13th International Marine Design Conference, IMDC 2018; Espoo; Finland; 10 - 14 June 2018.
51. Konispoliatis, D.N., Mavrakos, S.A., Chatjigeorgiou, I.K.: "Hydrodynamics of a free - surface piercing, porous cylindrical body"

- Proceedings, *31st International Ocean and Polar Engineering Conference (ISOPE2021)*, June 20-25, 2021, Rhodes (virtual), Greece.
52. Konispoliatis, D.N., Chatjigeorgiou, I.K., Mavrakos, S.A.: "Mean drift forces on a vertical porous cylindrical body", Proceedings, *36th International Workshop on Water Waves and Floating Bodies (IWWWFB2021)*, Seoul, South Korea, 25 – 28 April, 2021.
- 9.2.2 *Publications related to the hydrodynamic analysis and evaluation of the efficient of wave energy converters*
53. McIver, P., Mavrakos, S.A., Singh, G., "Wave-Power absorption by arrays of devices", Proceedings, *2nd European Wave Power Conference*, Lisbon, Portugal, 1995.
 54. Mavrakos, S.A., Kalofonos, A., "Optimum power absorption by arrays of interacting vertical axisymmetric wave-energy devices", Proceedings, *15th International Conference on Offshore Mechanics and Arctic Engineering (OMAE' 96)*, Florence, 1996, Vol. I, Part B, 133 - 141.
 55. Mavrakos, S.A., Katsaounis, G., Nielsen, K., Lemonis, G. "Numerical Performance Investigation of an Array of Heaving Wave Power Converters in Front of a Vertical Breakwater", Proceedings, *International Conference of Offshore and Polar Engineering (ISOPE 2004)*, 2004, Toulon, France.
 56. Mavrakos, S.A. and Katsaounis, G.: "Parametric Evaluation of the Performance Characteristics of Tightly Moored Wave Energy Converters", Proceedings, *24th Offshore Mechanics and Arctic Engineering Symposium (OMAE 2005)*, Halkidiki, Greece.
 57. Mavrakos, S.A., Katsaounis, G., Chatjigeorgiou, I.K., "Performance Characteristics of tightly moored wave energy converters under first- and second-order wave loads", Proceedings, *7th European Wave and Tidal Energy Conference*, 2007, Porto, Portugal.
 58. Mavrakos, S.A., Katsaounis, G.M., Chatjigeorgiou, I.K., "Performance characteristics of tightly moored piston-like wave energy converter under first- and second-order wave loads", Proceedings, *27th Offshore Mechanics and Arctic Engineering Symposium (OMAE 2008)*, 2008, Estoril, Portugal.
 59. Mavrakos, S.A., Katsaounis, G. Apostolides, M., "Effect of floaters' geometry on the performance characteristics of tightly moored wave energy converters", Proceedings, *28th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2009)*, Paper No: OMAE2009-80133, 2009, Honolulu, Hawaii, 31 May – 5 June, USA.
 60. Mavrakos, S.A., Katsaounis, G., "Parametric evaluation of the performance characteristics of tightly moored wave energy converters for several floaters' geometries", Proceedings, *8th European Wave and Tidal Energy Conference (EWTEC 2009)*, September 2009, Uppsala, Sweden.
 61. Mavrakos, S.A., Konispoliatis, D.: "Hydrodynamics of a floating oscillating water column device", Proceedings, *14th Congress of the*

- International Maritime Association of the Mediterranean*, September 13-16, 2011, Genoa, Italy.
62. Mavrakos, S.A., Katsaounis, G.M., Kladas, A., Kimoulakis, N.: "Numerical and experimental investigation of performance of heaving WEC's coupled with DC generators", *Proceedings, 9th European Wave and Tidal Energy Conference*, 5-9 September 2011, Southampton, U.K.
 63. Mavrakos, S.A., Konispoliatis, D. N.: "Hydrodynamic Analysis of a vertical axisymmetric oscillating water column device floating in finite depth water", *Proceedings, 31st International Conference Ocean, Offshore and Arctic Engineering (OMAE2012)*, July 1-6, 2012, Rio de Janeiro, Brazil.
 64. Konispoliatis, D.N., Mavrakos, S.A.: "Hydrodynamic interactions among multiple cylindrical OWC's devices restrained in regular waves", *Proceedings, 28th International Workshop on Water Waves and Floating Bodies (IWWWFB2013)*, April 7 - 10, 2013, L' Isle sur la Sorgue, France.
 65. Konispoliatis, D.N., Mavrakos, S.A.: "Hydrodynamics of multiple vertical axisymmetric OWC's devices restrained in waves", *Proceedings, 32nd International Conference Ocean, Offshore and Arctic Engineering (OMAE2013)*, June 9 - 14, 2013, Nantes, France.
 66. Konispoliatis, D.N., Mavrakos, S.A.: "Hydrodynamics of arrays of OWC's devices consisting of concentric cylinders restrained in waves", *Proceedings, 10th European Wave and Tidal Energy Conference (EWTEC2013)*, 2 - 5 September 2013, Aalborg, Denmark.
 67. Konispoliatis, D.N., Mavrakos, S.A.: "Mean Drift Loads on Arrays of Free Floating OWC Devices Consisting of Concentric Cylinders", *Proceedings, 29th International Workshop on Water Waves and Floating Bodies (IWWWFB2014)*, March 30 - April 02, 2014, Osaka, Japan.
 68. Konispoliatis, D.N., Mavrakos, S.A.: "Hydrodynamics and Power Absorption Characteristics of Free Floating and Moored Arrays of OWC's Devices", *Proceedings, 33rd International Conference Ocean, Offshore and Arctic Engineering (OMAE2014)*, June 8- 13, 2014, San Francisco, California, U.S.A.
 69. Mavrakos S.A., Soukissian T.H., Konispoliatis D.N. : "Efficiency of an array of oscillating water column devices for energy absorption in the Mediterranean Sea", *Proceedings, 12th Panhellenic Symposium on Oceanography & Fisheries*, 30 May - 3 June, 2018, Corfu, Greece.
 70. Konispoliatis, D.N, Mazarakos, T.P, Soukissian, T.H, Mavrakos, A.S, Mavrakos, S.A. : "Parametric analysis of a vertical axisymmetric oscillating water column device for maximum wave energy absorption in the Mediterranean Sea", *Proceedings, 5th International Interdisciplinary Symposium "Poiïessa"*, October 5 - 7, 2018, Rhodes, Greece.
 71. Konispoliatis, D., Mazarakos, T., Katsidoniotaki, E., Vamiadakis, A., Soukissian, T., Mavrakos, S.A. "Efficiency of an array of OWC devices equipped with air turbines with pitch control", *Proceedings, 13th European Wave & Tidal Energy Conference (EWTEC2019)*, 1 - 6 September 2019 Napoli, Italy

72. Konispoliatis, D.N., A.S. Mavrakos, A.S., Mavrakos, S.A. : “Efficiency of wave energy devices in Argolic Gulf”, *Proceedings, 6th International Interdisciplinary Symposium “Mycenae 2019”*, October 11 – 13, 2019, Nafplion, Greece.
73. Soukissian, T., Adamopoulos, Ch., Veldeki, G., Prospathopoulos, A., Kokkali, A., Mavrakos, S.A., Karathanasi, F.: “Blue energy in the Mediterranean and the Greek Hub – PELAGOS Project”, *Proceedings, 6th International Interdisciplinary Symposium “Mycenae 2019”*, October 11 – 13, 2019, Nafplion, Greece.
74. Mavrakos, S.A. “Hybrid floating energy systems for the combined exploitation of offshore wind and wave energy sources”, *Proceedings, 6th International Interdisciplinary Symposium “Mycenae 2019”*, October 11 – 13, 2019, Nafplion, Greece.
75. Konispoliatis, D.N., Mavrakos, A.S., Mavrakos, S.A.: “Efficiency of an oscillating water column device for several mooring systems”, *Proceedings, 4th International Conference on Renewable Energies Offshore, RENEW 2020*, Lisbon, Portugal, 12 - 15 October 2020
76. Konispoliatis, D.N., Mavrakos, A.S., Mavrakos, S.A.: “Efficiency properties of a wave energy converter placed in front of a vertical breakwater”, *Proceedings, 31st International Ocean and Polar Engineering Conference (ISOPE2021)*, June 20-25, 2021, Rhodes (virtual), Greece.
77. Konispoliatis, D.N., Mavrakos, A.S., Mavrakos, S.A., Chatjigeorgiou I.K.: “Effect of moorings on the efficiency of a floating oscillating water column device”, *14th European Wave and Tidal Energy Conference (EWTEC2021)*, 5 - 9 September 2021, Plymouth, U.K.

9.2.3 *Publications related to the static and dynamic analysis and optimum design of mooring systems and slender marine structures-Applications*

78. Mavrakos, S., Papazoglou, V.J., Triantafyllou, M., “An investigation into the feasibility of deep water anchoring systems”, *Proceedings, 8th International Conference on Offshore Mechanics and Arctic Engineering (OMAE’ 89)*, The Hague, Netherlands, 1989, Vol. 1, 683-689.
79. Mavrakos, S., Neos, L., Papazoglou, V.J. and Triantafyllou, M., “Systematic Evaluation of the Effect of Submerged Buoys Size and Location on Deep Water Mooring Dynamics”, *Proceedings, PRADS’89 Symposium*, Varna, Bulgaria, October 1989, Vol. 3, pp. 105.1-105.8.
80. Papazoglou, V.J., Mavrakos, S.A., Triantafyllou, M.S. and Brando, P., “A Scaling Procedure for Mooring Experiments”, *Proceedings, 1st European Offshore Mechanics Symposium (EUROMS’90)*, Trondheim, Norway, August 1990, 490-498.
81. Mavrakos, S.A., Papazoglou, V.J., Triantafyllou, M.S. and Brando, P., “Experimental and Numerical Study on the Effect of Buoys on Deep Water Mooring Dynamics”, *Proceedings, 1st International Offshore and*

- Polar Engineering Conference (ISOPE'91)*, Edinburgh, U.K., 1991, Vol. II, 243-251.
82. Mavrakos, S.A., "Mooring lines", *Proceedings, 11th International Ship and Offshore Structures Congress (ISSC'91)*, Wuxi, China, 1991, Vol. 2, 292-296.
 83. Mavrakos, S.A., Chatjigeorgiou, J. and Papazoglou, V.J., "Use of Buoys for Dynamic Tension Reduction in Deep Water Mooring Applications", *Proceedings, 7th International Conference on the Behavior of Offshore Structures (BOSS'94)*, Pergamon, Boston, July 1994, Vol. 2, 417-426.
 84. Mavrakos, S.A., "Global structural analysis models for mooring lines", *Proceedings, 12th International Ship and Offshore Structures Congress (ISSC'94)*, St. John's, Canada, 1994, Vol. 2, 313-324.
 85. Mavrakos, S.A., Chatjigeorgiou, J., "Dynamics of mooring lines for deep water applications", *Proceedings, 2nd International Symposium on Computational Structures Technology (CST'94)*, CIVIL - COMP Ltd Publ., Athens, Greece, 1994, 149-157.
 86. Mavrakos, S.A., Chatjigeorgiou, J., "Mooring-induced damping on floating structures", *Proceedings, 1st International Conference on Marine Industry (MARIND' 96)*, Varna Bulgaria, 1996, Vol. II, 365-378.
 87. Chatjigeorgiou, J.K., Mavrakos, S.A., "Nonlinear contributions in the prediction of dynamic tension on mooring lines, for high and low frequencies of excitation", *Proceedings, 7th International Symposium on Offshore and Polar Engineering (ISOPE'97)*, Honolulu, Hawaii, May 1997.
 88. Chatjigeorgiou, J.K., Mavrakos, S.A., "Dynamic tension variation along steel mooring lines with attached submerged buoys", *Proceedings, 6th International Maritime Association of Mediterranean (IMAM)*, Istanbul, Turkey, Nov. 1997.
 89. Chatjigeorgiou, I.K., Mavrakos, S.A., "Assessment of Bottom Cable Interaction Effects on Mooring Line Dynamics", *Proceedings, 17th International Conference on Offshore Mechanics and Arctic Engineering (OMAE' 98)*, Lisbon, 1998, Paper No. 98-355.
 90. Chatjigeorgiou, I.K., Mavrakos, S.A., "Systematic Evaluation of the Mooring Line Induced Damping on Floating Structures", *Proceedings, 5th National Symposium on Theoretical and Applied Mechanics*, Ioannina, Greece, Sept. 1998.
 91. Chatjigeorgiou, I.K., Mavrakos, S.A., "Comparison of Numerical Methods for Predicting the Dynamic Behavior of Mooring Lines", *Proceedings, 9th International Symposium on Offshore and Polar Engineering (ISOPE'99)*, Brest, France, 1999, Vol. II, 332-339.
 92. Chatjigeorgiou, I.K., Mavrakos, S.A., "Dynamic Behaviour of a Hanged Cable for Deep Water Applications", *Proceedings, 6th National Congress on Mechanics, HSTAM*, Thessaloniki, Greece, 2001, Vol. I, 408-415.
 93. Chatjigeorgiou, I.K., Mavrakos, S.A., "A Solution to the 2-D Bending Vibration Problem of a Vertical Marine Riser", *Proceedings, International Maritime Association of the Mediterranean Conference (IMAM2002)*, Paper No. 131, Crete, Greece 2002.

94. Chatjigeorgiou, I.K., Mavrakos, S.A., "An investigation of the non-linear transverse vibrations of parametrically excited vertical marine risers and cables under tension" *Proceedings, 21st International Conf on Offshore Mechanics and Arctic Eng, OMAE 2002, Oslo, Norway, 2002, Paper No 28170.*
95. Mavrakos, S.A., "Recent development in the mooring lines analysis methods", *Proceedings, 15th International Ship and Offshore Structures Congress (ISSC'03), San Diego, U.S.A., 2003.*
96. Chatjigeorgiou, I.K., Mavrakos, S.A., "Higher order restoring forces for the design of multi-leg mooring arrangements", *Proceedings, 8th International Marine Design Conference (IMDC 2003), Athens, Greece, 2003, Vol. II, pp. 343 - 352.*
97. Chatjigeorgiou, I.K., Georgakopoulos, C.G. and Mavrakos, S.A., "Non-linear Dynamics of Vertical Risers under Parametric and Lateral Excitation and Effect of Internal Flow", *Proceedings, 3rd International Conf on Hydroelasticity in Marine Technology, 51-61 Oxford, England, 2003.*
98. Chatjigeorgiou, I.K., and Mavrakos, S.A. "Coupled internal resonances of a two-degree of freedom system subjected to weak parametric excitation: Application for vertical slender structures", *Proceedings, HSTAM 2004 Conference, Vol. II, 301-309, Chania, Crete.*
99. Chatjigeorgiou, I.K., Xiros, N.I. and Mavrakos, S.A. "Coupling Contributions and Effect of Mathieu Instabilities in the Dynamic Behaviour of Vertical Elastic Cables and Risers", *Proceedings, WSEAS Multiconference, IASME, Corfu, Greece, 2004.*
100. Chatjigeorgiou, I.K., Thanos, I., Bourma, P., Mazarakos, Th. and Mavrakos, S.A. "Mooring System and Motion Response Analysis of a Gas Import Floating Terminal in Operating and Survival Conditions", *Proceedings, 25th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2006), Hamburg, 4 - 9 June 2006, Germany.*
101. Chatjigeorgiou, I.K., Mavrakos, S.A., "Heave Induced out-of-plane motions on catenary risers", *Proceedings, 13th International Congress of the International Maritime Association of the Mediterranean (IMAM 2009), October 2009, Istanbul, Turkey.*
102. Chatjigeorgiou, I.K., Katifeoglou, S., Sakellariou, M.G., Mavrakos, S.A.: "Interaction of suspended pipelines with sea bottom in deep water applications", *Mini-symposium on Nonlinear Dynamics for Engineering Design, 7th European Nonlinear Dynamics Conference (ENOC2011), July 24-29, 2011, Rome, Italy.*
103. Chatjigeorgiou, I.K., Mavrakos, S.A.: "Buckling behavior of catenary risers conveying fluids", *Proceedings, 14th Congress of the International Maritime Association of the Mediterranean (IMAM2011), September 13-16, 2011, Genoa, Italy.*
104. Chatjigeorgiou, I.K., Katifeoglou, S., Mavrakos, S.A.: "An investigation on the interaction between the seafloor and a vibrating catenary riser conveying fluid", *Mini-Symposium "MS24 Offshore Structures", 8th International Conference on Structural Dynamics EUROLYN 2011*

105. Katifeoglou, S.A., Chatjigeorgiou, I.K., Mavrakos, S.A.: "Effects of fully developed turbulent internal flow on marine risers' dynamics", Proceedings, 22nd International Offshore (Ocean) and Polar Engineering Conference (ISOPE 2012), 17-22 Rhodes, Greece.
106. Stavrou, D.I., Ventikos, N.P., Mavrakos, S.A.: "Dynamic monitoring of risk failure of loading arm for LNG site-by-site operation", Proceedings, 26th International Offshore (Ocean) and Polar Engineering Conference (ISOPE 2016), June 26 - July 2, Rhodes, Greece.
107. Stavrou, D.I., Ventikos, N.P., Mavrakos, S.A.: "Application of FIS Methodology to Risk Failure Estimation of LNG Transfer Loading Arms in Side-by-Side Configuration", Proceedings, 27th International Offshore (Ocean) and Polar Engineering Conference (ISOPE 2017), June 25 - 30, San Francisco, U.S.A.

9.2.4 Publications related to the design of underwater oceanographic vehicles

108. Bourma, P., Thanos, I., Mavrakos, S.A.: "Research and Development of an autonomous underwater glider: Modeling, Design and Control", Proceedings, 1st International Workshop on Underwater Vehicles, March 2009, National Center for Marine Research, Anavissos, Greece.

9.2.5 Publications related to the analysis of floating and fixed wind turbine concepts and hybrid systems

109. Tomasicchio, G.R., Armenio, E., D' Alessandro F., Fonseca, N., Mavrakos, S.A., Penchev, V., Schuettrumpf, H., Voutsinas, S., Kirkegaard, J., Jensen, P. M.: "Design of a 3D physical and numerical experiment on floating off-shore wind turbines", Proceedings, Intern. Conference on Coastal Engineering (ICCE2012), Santander, Spain, 2012.
110. Mazarakos, T.P., Manolas, D., Grapsas, T., Mavrakos, S. A., Riziotis, V.A. & Voutsinas, S.G.: "Conceptual Design and advanced hydro-aero-elastic modeling of a TLP concept for floating Wind Turbine applications, Proceedings, 1st International Conference on Renewable Energies Offshore (RENEW2014), 26 - 26 November 2014, Lisbon, Portugal.
111. Mazarakos, T.P., Konispoliatis, D.N., Manolas, D.I., Mavrakos, S.A., Voutsinas, S.G. : "Coupled hydro - aero - elastic analysis of a multi - purpose floating structure for offshore wind and wave energy sources exploitation", Proceedings, 12th International Conference on the Stability of Ships and Ocean Vehicles (STAB2015), 14-19 June 2015, Glasgow, UK.
112. Mazarakos, T.P., Konispoliatis, D.N., Manolas, D.I., Voutsinas, S.G., Mavrakos, S.A.: "Modelling of an Offshore Multi - Purpose Floating Structure Supporting a Wind Turbine including Second - Order Wave Loads", Proceedings, 13th European Wave and Tidal Energy Conference (EWTEC 2015), September 2015, Nantes, France.

113. Mazarakos, T.P., Mavrakos, S.A.: "Experimental Investigation on Mooring Loads and Motions of a Spar Buoy Floating Wind Turbine", Offshore Energy and Storage Symposium and Industry Connector Event (OSES 2016), University of Malta, Valletta, Malta, 13 – 15 July 2016.
114. Mazarakos, T.P., Konispoliatis, D.N., Mavrakos, S.A.: "Design of a TLP floating structure concept for combined wind and wave energy exploitation, 2nd International Conference on Renewable Energies Offshore (RENEW2016), 24 – 26 October 2016, Lisbon, Portugal.
115. Mazarakos, T.P., Konispoliatis, D.N., Mavrakos, S.A.: "Parametric hydrodynamic analysis of a moored floating structure for combined wind and wave energy exploitation", 12th International Conference on Hydrodynamics (ICH2016), 18 – 23 September 2016, Egmond aan Zee, The Netherlands.
116. Mazarakos, T.P., Mavrakos, S.A.: Experimental Investigation on mooring loads and motions of a TLP floating wind turbine, 12th International Conference on Ecological Vehicles and Renewable Energies (EVER' 2017), April 11 – 13, 2017, Monaco.
117. Katsaounis, G. M., Polyzos, S., Mavrakos, S. A.: An experimental study of the hydrodynamic behavior of a TLP platform for 5M wind turbine with OWC devices, VIIth International Conference on Computational Methods in Marine Engineering (MARINE 2017), 15 – 17 May 2017, Nantes, France.
118. Mazarakos, T.P., Konispoliatis, D.N., Katsaounis, G., Polyzos, S., Manolas, D., Voutsinas, S., Mavrakos, S.A.: Numerical and experimental studies of an offshore multi – purpose floating structure supporting a wind turbine, Proceedings, 12th European Wave and Tidal Energy Conference (EWTEC 2017), 27 August – 2 September, 2017, Cork, Ireland.
119. Mazarakos, T.P., Konispoliatis, D.N., Mavrakos, S.A.: Hydrodynamic Loading and Fatigue Analysis of an Offshore Multi – Purpose Floating Structure for Offshore Wind and Wave Energy Sources Exploitation, Proceedings, 17th International Conference of the International Maritime Association of the Mediterranean (IMAM 2017), 9 – 11 October 2017, Lisbon, Portugal.
120. Konispoliatis, D.N., Mazarakos, T.P., T.H. Soukissian, T.H., Mavrakos, S.A.: "REFOS: A multi – purpose floating platform suitable for wind and wave energy exploitation", Proceedings, 12th International Conference on Deregulated Electricity Market Issues in South Eastern Europe (DEMSEE 2018), September 20-21, 2018, Nicosia, Cyprus.
121. Soukissian, T., Karathanasi, F., Prospathopoulos, A., Mavrakos S.A., Konispoliatis, D.: "Wind and Wave Power Potential Offshore Rhodes Island", Proceedings, 5th International Interdisciplinary Symposium "Poiessa", October 5 – 7, 2018, Rhodes, Greece
122. Mazarakos, T.P., Konispoliatis, D., Vamiadakis, A., Soukissian, T., Mavrakos, S.A.: "Evaluation of the Wave and Wind Energy Yield of a Multi-Purpose Floating Structure in the Aegean Sea", Proceedings, 5th

- International Interdisciplinary Symposium "Poiessa", October 5 – 7, 2018, Rhodes, Greece*
123. Mazarakos, T.P., Mavrakos, S. A. "Second order wave drift damping of a TLP floating structure concept for combined wind and wave energy", *3rd International Conference on Renewable Energies Offshore, RENEW 2018*; Lisbon; Portugal; 8 – 10 October 2018
 124. Mavrakos, S.A., Manolas, D. "Wind-Wave coupled dynamic analysis of offshore energy systems", *Proceedings, JABACO Workshop*, December 3rd, Edinburgh, Scotland, U.K.
 125. Mazarakos, T.P., Mavrakos, S. A., Soukissian, T.H. "Wave Loading and Wave Energy of a Spar Buoy Floating Wind Turbine", *14th International Conference on Ecological Vehicles and Renewable Energies (EVER2019)*, Monte-Carlo, Monaco, 8 - 10 May 2019.
 126. Mazarakos, T.P., Konispoliatis, D.N., Soukissian, T.H., Mavrakos, S.A. "Significant motions of a multi-purpose floating offshore structure due to environmental conditions", *Proceedings, 13th European Wave & Tidal Energy Conference (EWTEC2019)*, 1 – 6 September 2019 Napoli, Italy.
 127. Mazarakos, T.P., Mavrakos, S.A. : "Mean second-order wave drift forces contour of a floating structure concept for wind energy exploitation, *4th International Conference on Renewable Energies Offshore, RENEW 2020*, Lisbon, Portugal, 12 - 15 October 2020
 128. Mazarakos, T.P., Manolas, D., Mavrakos, S.A.: "Design and hydro-aero-elastic modeling of a TLP concept for floating Wind Turbine applications", *Proceedings, 31st International Ocean and Polar Engineering Conference (ISOPE2021)*, June 20-25, 2021, Rhodes (virtual), Greece.
 129. Mazarakos, T.P., Manolas, D., Mavrakos, S.A.: "Design and hydro-aero-elastic modeling of a multi leg mooring concept for floating Wind Turbine applications", *16th International Conference on Ecological Vehicles and Renewable Energies (EVER2021)*, Monte-Carlo, Monaco, 5 - 7 May 2021.
 130. Mazarakos, T.P., Soukissian, T.H, Mavrakos, S.A.: "Hydrodynamic and wind/wave energy calculations of a floating wind turbine system in the Mediterranean Sea", *14th European Wave and Tidal Energy Conference (EWTEC 2021)*, 5 - 9 September, 2021, Plymouth, U.K.

9.3 Books – Chapter in Books

1. Kokkinowrachos, K., Asorakos, S., Mavrakos, S. A., "Belastungen und Bewegungen grossvolumiger Seebauwerke durch Wellen", West-deutscher Verlag, Opladen, Germany, 1980, ISBN 3-531-02905-3.
2. Mavrakos, S.A., Spyrou, K. (Eds): *Proceedings of the 10th International Congress of the Maritime Association of the Mediterranean, I.M.A.M. 2002.*

3. Mavrakos, S.A., Bernitsas, M. (Eds): Proceedings of the 24th International Conference on Offshore Mechanics and Arctic Engineering (OMAE2005), Halkidiki, June 2005, Greece.
4. Mavrakos, S.A.: "Installations for the marine resources exploitation" (in Greek), Greek Educational Cyclopedia, Technology and Computer Sciences, Publishing Company "Ekdotiki Athinon", Athens, Vol. 19 (9), 140 – 142.
5. Mavrakos, S.A.: "Floating Infrastructures" (in Greek), Greek Educational Cyclopedia, Technology and Computer Sciences, Publishing Company "Ekdotiki Athinon", Athens.
6. Mavrakos, S.A., Chatjigeorgiou, I.K. "Second-order wave induced loads on vertical bodies of revolution", In: Marine Technology and Engineering, Editors: Carlos G. Soares, Y. Garbatov, N. Fonseca, A. P. Teixeira, CRC Press, Taylor & Francis Group, 2011, ISBN 978-0-415-69808-5, London, U.K., p. 479 - 501
7. Chatjigeorgiou, I.K., Mavrakos, S.A., "The 3D nonlinear dynamics of catenary slender structures for marine applications", IN-TECH Publisher, Vienna, Austria, 2009, ISBN 978-953-7619-61-9, Editor: Todd Evans
8. Mavrakos, S.A., Chatjigeorgiou, I.K. (Eds): Proceedings of the 26th International Workshop of Water Waves and Floating Bodies (IWWWFB 2011), Athens, 2011, Greece, ISBN 978-960-254-694-9
9. Chatjigeorgiou, I.K., Mavrakos, S.A.: "Cable dynamics for marine applications", Springer Handbook of Ocean Engineering", ed. By Manhar R. Dhanak and Nikolaos I. Xiros, Part D: Offshore Technologies, ID: 10.1007/978-3-319-16649-0 – 038
10. Zilli, G., Thibaux, Ph., Karamanos, S.A., Vossbeck, M., Mavrakos, S.A., Ruiz, C.: "Development of Modular Steel Jacket for Offshore Wind Farms (JABACO), EU Publishing, ISBN: 978-92-76-25387-7, ISSN: 1831 – 9424, doi: 10.2777/147264

9.4 Citations

Using the <http://scholar.google.com>, <http://www.scopus.com> citation indexes, as well as published proceedings of several conferences and congresses, 1479 citations (google scholar, h – index:18, i10-index: 37) and 1115 citations (h-index: 18) have been found, respectively.

9.5 University textbooks

1. Mavrakos, S.A.: «Hydrodynamic Analysis of Floating Structures» (in Greek), School of Naval Architecture and Marine Engineering, National Technical University of Athens, 437 pages, 2003.

2. Mavrakos, S.A.: «Dynamics of Marine Structures», (in Greek), School of Naval Architecture and Marine Engineering, National Technical University of Athens, 194 pages, 2000.
3. Mavrakos, S.A., Chatjigeorgiou, I.K.: «Design of mooring systems for floating structures» (in Greek), School of Naval Architecture and Marine Engineering, National Technical University of Athens, 190 pages, 2000.
4. Mavrakos, S.A.: “Environmental Conditions and Loading on Marine Structures” (in Greek), Post-Graduate Course on Marine and Ocean Technology and Science, School of Naval Architecture and Marine Engineering, National Technical University of Athens, 224 pages, 2001.
5. Mavrakos, S.A.: «Hydroelastic response of marine structures» (in Greek), Post-Graduate Course on Marine and Ocean Technology and Science, School of Naval Architecture and Marine Engineering, National Technical University of Athens, 78 pages, 2001.
6. Mavrakos, S.A.: “Basics in the Floating Structures Design” (in Greek), Notes, *Educational Seminar on Ocean Engineering organized by the Greek Chamber of Engineers and the Greek Association of Chartered Naval Architects*, Athens, December 1987.
7. Mavrakos, S.A.: “Design environmental conditions and Wave Loads on Offshore Structures”(in Greek), Notes, *Educational Seminar on Oil Platforms and other Marine Structures made of Reinforced Concrete*, Laboratory of Reinforced Concrete, School of Civil Engineering, National Technical University of Athens, Athens 1988, 66 pages.
8. Mavrakos, S.A.: “Mooring Systems”(in Greek), Notes, *Educational Seminar on Ocean Engineering organized by the Greek Chamber of Engineers and the Greek Association of Chartered Naval Architects*, Athens, November 1989.
9. Mavrakos, S.A.: “Introduction to the Offshore Structures” (in Greek), University Notes for the Lecture “Introduction to Naval Architecture and Ocean Engineering”, School of Naval Architecture and Marine Engineering, National Technical University of Athens, Athens, 1994
10. Mavrakos, S.A. “Small Craft Ports and Marinas”, WEGEMT Association Twenty Fifth School on Small Craft Technology, Athens, October, 1997.
11. Mavrakos, S.A. “Deep Water Moorings: Arrangement, Configuration, Behaviour and Evaluation”, WEGEMT Association Twenty Fourth School on Surface Support of Subsea Activities, Glasgow, March 1998.

9.6 Publications in National and International Workshops, Newspapers

1. Mavrakos, S.A. “Analysis of Loads and Motions of Moored Ships in Harbors” (in Greek), Proceedings, *3rd National Congress of Harbor Works*, Athens, 2003, 539 - 557.
2. Kladas, A., Koulakoglou, S., Lemonis, G., Mavrakos, S.A., Katsaounis, G., Stasinopoulos, A., Chatjilakos, K. “Demonstrative Electricity Production Installation powered by sea waves” (in Greek), *3rd National Conference on the Application of Renewable Energy Technologies: Perspectives and Priorities towards to 2010*, 2005, Athens, Greece

3. Mavrakos, S.A., Katsaounis, G., Chatjigeorgiou, I.K.: "Performance evaluation of moored WEC's exposed to the action of first- and second-order wave loading" (in Greek), PYTHAGORAS, Symposium on the Scientific Research at National Technical University of Athens, July 2007, Plomati, Lesvos, Greece.
4. Chatjigeorgiou, I.K., Mavrakos, S.A., Mazarakos, Th.: Hydrodynamic loading on a bottom seated, free - surface piercing vertical cylinder under the combined action of surface gravity waves and marine current"(in Greek), PYTHAGORAS, Symposium on the Scientific Research at National Technical University of Athens, July 2007, Plomati, Lesvos, Greece.
5. Mavrakos, S.A., Spyrou, K., Tzabiras, G., Thanos, I., Mazarakos, Th., Tzamtzis, S. "Towing of large ships through the Corinth Cannel" (in Greek), *Annual Symposium on Marine Technology*, Greek Institute on Marine Technology, Piraeus, November 2007.
6. Mavrakos, S.A.: "Ocean Energy", Proceedings (in Greek), Workshop on the contribution of the School of Naval Architecture and Marine Engineering, NTUA, to the Greek Marine Industry on the occasion of the 170 anniversary of the NTUA, Athens, December 2007
7. Mavrakos, S.A., Chatjigeorgiou, I.K.: "Last Developments in the Research on Ocean Engineering in the National Technical University of Athens", Workshop on the the occasion of the 170 anniversary of the NTUA, Athens, December 2007
8. Bourma, P.D., Thanos, I.F., Mavrakos, S.A., "Quality control protocol for an autonomous underwater glider", Proceedings (Poster Session), *IMDIS Conference, 2008*, Athens, Greece.
9. Mavrakos, S.A.: «Systems for Ocean Energy Exploitation» (in Greek), ECOFORUM, Athens, 2008.
10. Mavrakos, S.A.: «The future is in the sea» (in Greek), Newspaper Real News, Real Planet, 29/11/2009.
11. Mavrakos, S.A., Chatjigeorgiou, I.K, Mazarakos, Th., Konispoliatis, D.: "Experimental and numerical investigation of the hydrodynamic loads and wave elevation on concentric vertical cylinders", Proceedings Joint User Meeting, HYDRALAB III EU project, Hannover, Feb. 2010, Germany.
12. Pessoa, J., Fonseca, N., Guedes Soares, C., Le Boullec, M., Ohana J., Mavrakos, S., Mazarakos, Th., Jensen, B., Kirkegaard, J.: "Experimental study of the slowly varying wave exciting drift forces on a body of simple geometry", Proceedings Joint User Meeting, HYDRALAB III EU project, Hannover, Feb. 2010, Germany.
13. Chatjigeorgiou, I.K., Mavrakos, S.A. : "The effect of internal ideal fluid on the 3D dynamics of large sag pipelines", Technical Bulletin of the Society of the Greek Naval Architects, Nr. 116, July-September Issue 2010, pp. 24 - 28.
14. Manolas, D., Katsaounis, G., Riziotis, V., Mavrakos, S.A., Voutsinas, S.: "Advanced Hydro-Aero-Elastic Modelling of Floating Wind Turbines",

- Proceedings, European Wind Energy Association Conference (EWEA 2011), Brussels, 2011.
15. Bourma, P., Thanos, I., Mavrakos, S.A.: "Glider design process: starting from the beginning", 5th EGO Meeting and Glider School, 2011 March 14th – 18th, Gran Canarias, Spain
 16. Mavrakos, S.A.: "Major Accidents and the New EU Safety Directive for Offshore Oil & Gas Exploration Activities", 1st International Geo – Cultural Symposium "Kaldera 2014, Santorini 7/6/2014
 17. Mazarakos, T. P., Mavrakos, S. A., Konispoliatis, D. N., Voutsinas, S., Manolas, D. : " Frequency domain analysis for a coupled hydro- aero-elastic behavior of a moored multi- purpose floating structure", International Workshop in the framework of the European Program COCONET, National Centre for Marine Research NCMR, 9 – 10/6/2014, Analyses, Greece.
 18. Mavrakos, S.A.: "Multi – purpose floating structures for the offshore wind and wave energy sources exploitation", 3rd Hellenic Forum for Science Technology and Innovation, 29/6/2015 – 3/7/2015, National Center for Scientific Research "DEMOKRITOS"

9.7 *Technical Reports*

1. Kokkinowrachos, K., Asorakos, S., Grallert, M., Mavrakos, S.: "Bericht ueber die theoretische and experimentelle Untersuchung des Seeverhaltens eines schwimmenden LNG-Speichers" (in German), Final report the the German Company Dyckerhoff & Widmann A.G., Jan. 1976.
2. Kokkinowrachos, K., Mavrakos, S.: "Nichtlineare Fluessigkeitsbewegungen innerhalb teilgefüellter rotations-symmetrischer Behaelter mit vertikaler Achse" (in German), Final Report to the German Ministry for Research and Technology from Ocean Engineering Devision, RWTH-Aachen, 1982.
3. Loukakis, T., Mavrakos, S.A., Athanassoulis, G., Politis, G.: "Hydrodynamic Analysis of Semi-Submersibles" (in Greek), Final report to the Greek Ministry for Research and Technology from the Department of Naval Architecture and Marine Engineering, National Technical University of Athens, Jan. 1986.
4. Mavrakos, S., Papazoglou, V.J. and Triantafyllou, M.S.: "Feasibility Study for Deep Water Anchoring Systems", Series of three Interim Reports and Final Report to the Hydrocarbon Division, Energy Directorate, C.E.C. from N.T.U.A., Project No. TH06027/86, July 1987, January 1988, July 1988 and February 1989.
5. Spyridakis, M., Asorakos, S., Mavrakos, S., Papazoglou, V. and Trezos, K.: "Specifications for the Design of Floating Marinas-Phase A" (in

- Greek), Technical Report to the Hellenic Tourist Organization from MAR.TE.DEC. S.A. and N.T.U.A., March 1989.
6. Brando, P., Mavrakos, S., Papazoglou, V. and Triantafyllou, M.: "Use of Buoys to Reduce Static and Dynamic Tension in Deep Water Mooring Lines : A Pilot Study", Series of three Interim Reports and Final Report to the Hydrocarbon Division, Energy Directorate, C.E.C., Project No. TH 06046/88, July 1989, February 1990, August 1990 and April 1991.
 7. Mavrakos, S.A., Asorakos, S., Papazoglou, V.J. and Loukakis, T.A.: "Feasibility Study for the Development of Floating Swimming Pools" (in Greek), Final Technical Report to Toulief S.A., November 1991.
 8. Papazoglou, V.J., Mavrakos, S.A. and Triantafyllou, M.S.: "Deep Water Subsea System Servicing through the Surface : A Technology Transfer", 1st Technical Progress Report to the Energy Directorate, C.E.C., Department of Naval Architecture and Marine Engineering, January 1992.
 9. Papazoglou, V.J., Mavrakos, S.A. and Triantafyllou, M.S.: "Deep Water Subsea System Servicing through the Surface: A Technology Transfer", 2nd Technical Progress Report to the Energy Directorate, C.E.C., Department of Naval Architecture and Marine Engineering, July 1992.
 10. Papazoglou, V.J., Mavrakos, S.A. and Triantafyllou, M.S.: "Deep Water Subsea System Servicing through the Surface: A Technology Transfer", 3rd Technical Progress Report to the Energy Directorate, C.E.C., Department of Naval Architecture and Marine Engineering, July 1993.
 11. Mavrakos, S.A.: "Feasibility study for the Perama Ship repair area: Description and evaluation of the existing problems. Influence of the Perama Ship repair activities to the environmental conditions of the broader area" (in Greek), Supported by the Prefecture of Attika, Dec. 1993.
 12. Mavrakos, S.A., Asorakos, S., Papazoglou, V.J. and Loukakis, T.A.: "Development and Design of a New Concept for Open Sea Fish Farming" (in Greek), Final Technical Report to THALASSA S.A., Department of Naval Architecture and Marine Engineering, January 1994.
 13. Papazoglou, V.J. Mavrakos, S.A., Triantafyllou, M.S. and Hover, F.S.: "Deep Water Subsea System Servicing Through the Surface: A technology Transfer", Final Technical Report to the Energy Directorate, C.E.C., Department of Naval Architecture and Marine Engineering, May 1994.
 14. Mavrakos, S.A.: "Mooring system design for a pipe-laying ship operating between Igoumenitsa-Corfu" (in Greek), Final Technical Report to FULGOR S.A., Department of Naval Architecture and Marine Engineering, May 1994.
 15. Mavrakos, S.A.: "Mooring system design for a pipe-laying ship operating between Preveza-Corfu" (in Greek), Final Technical Report to FULGOR S.A., Department of Naval Architecture and Marine Engineering, Febr. 1995.

16. McIver, P., Mavrakos, S.A., Singh, G.: "Wave-power absorption by arrays of devices", Part of the Final Technical Report for the project *Offshore Wave Energy Converters (OWEC-1)*, submitted to the General Directorate for Research and Development, JOULE Program, C.E.C., Project No. Jou2-CT93-0394, Sept. 1995.
17. Mavrakos, S.A., Triantafyllou, M.S., Peponis, V., Chatjigeorgiou, J.: "Mooring System design for three floating Navy docks: Phase A- Preliminary design" (in Greek), First Technical Report to the Greek Navy from the Department of Naval Architecture and Marine Engineering, N.T.U.A., Nov. 1995.
18. Mavrakos, S.A., Loukakis, T., Grigoropoulos, Gr., Chatjigeorgiou, J.: "Experimental and Numerical Investigation of the Hydrodynamic Behavior of Floating Breakwaters" (in Greek), Interim Report to the Greek General Secretariat for Research and Technology from the Department of Naval Architecture and Marine Engineering, N.T.U.A., Nov. 1995.
19. Mavrakos, S.A., Chatzigeorgiou, J.: "Wind and Current forces on several types of ships" (in Greek), 1st Interim Report for the Research Project : Optimization of the design procedures for harbor works; Application to the Harbors of Alexandroupoli, Lagos and Kavala, Department of Naval Architecture and Marine Engineering, N.T.U.A., June 1996.
20. Mavrakos, S.A., Tsouvalis, N., Chatjigeorgiou, J., Peponis, V., Triantafyllou, M.S.: "Mooring System design for three floating Navy docks: Phase A- Final Preliminary design" (in Greek), Final Technical Report to the Greek Navy, Department of Naval Architecture and Marine Engineering, N.T.U.A., Nov. 1996.
21. Mavrakos, S.A., Loukakis, T., Grigoropoulos, Gr., Chatjigeorgiou, J.: "Experimental and Numerical Investigation of the Hydrodynamic Behavior of Floating Breakwaters" (in Greek), Final Technical Report to the Greek General Secretariat for Research and Technology from the Department of Naval Architecture and Marine Engineering, N.T.U.A., Jan. 1998.
22. Mavrakos, S.A., Chatjigeorgiou, I.K.: "Motions of moored ships in harbors", 4th Interim Report to the Greek General Secretariat for Research and Technology for the Research Project: Optimization of the design procedures for harbor works; Application to the Harbors of Alexandroupoli, Lagos and Kavala, Department of Naval Architecture and Marine Engineering, N.T.U.A., January 1999.
23. Mavrakos, S.A., Chatjigeorgiou, I.K.: "Application of the method for evaluating motions of moored ships in harbors to the case of Kavala and Alexandroupolis harbors", 5th Interim and Final Report to the Greek General Secretariat for Research and Technology for the Research Project: Optimization of the design procedures for harbor works; Application to the Harbors of Alexandroupoli, Lagos and Kavala, Department of Naval Architecture and Marine Engineering, N.T.U.A., January 1999.

24. Mavrakos, S.A.: "Development of software for the calculation of the mean wind and current loads on ships and systematic evaluation of the mean drift forces on arrangements of floating marinas (in Greek)", 1st Technical Report to the Greek General Secretariat for Research and Technology for the research project PAVE (contract: 97BE142), Department of Naval Architecture and Marine Engineering, NTUA, June 2000.
25. Mavrakos, S.A.: «Hydrodynamic Analysis of the floating offshore structure for the deployment of the instrumentation of the Laboratory NESTOR for neutrino monitoring», Technical Report (in Greek), Department of Naval Architecture and Marine Engineering, NTUA, April 2001.
26. Mavrakos, S.A. and Chatjigeorgiou, J: «Evaluation of the drag forces during the transportation and the operating phases of the floating offshore structure for the deployment of the instrumentation of the Laboratory NESTOR for neutrino monitoring», Technical Report (in Greek), Department of Naval Architecture and Marine Engineering, NTUA, June 2001.
27. Mavrakos, S.A.: «Hydrodynamic analysis for the change in use of the Jack-up "ANDROS" with a concrete caisson on it", Technical Report (in Greek) to the construction Company ATHENA S.A., Department of Naval Architecture and Marine Engineering, NTUA, April 2001.
28. Mavrakos, S.A., Katsaounis, G.M. and Holmes, B.: "Sea States Definition and Modeling", Deliverable D1, Technical Report for the Research Project LABBUOY supported by the EU, Contract No ENK6 - CT2001 - 00500, Department of Naval Architecture and Marine Engineering, NTUA, December 2002.
29. Mavrakos, S.A., Katsaounis, G.M., Nielsen, K., Lemonis, G., Chatjigeorgiou, I. K.: "Mechanical Systems Modeling", Deliverable D2, Technical Report for the Research Project LABBUOY supported by the EU, Contract No ENK6 - CT2001 - 00500, Department of Naval Architecture and Marine Engineering, NTUA, December 2002.
30. K. Nielsen, W. Beattie R. Alcorn, G.M. Katsaounis and S.A. Mavrakos: «Optimum configurations of physical scale model for representative sea states under consideration», Deliverable D4, Technical Report for the Research Project LABBUOY supported by the EU, Contract No ENK6 - CT2001 - 00500, Department of Naval Architecture and Marine Engineering, NTUA, March 2003.
31. Mavrakos, S.A., Katsaounis, G.: "Calculation of extreme environmental loads on an array of wave energy converters", Technical Report (in Greek) on the framework of the research project: "Construction of a demonstration plant for the electricity production from the waves" supported by the Greek General Secretariat for Research and Technology, PAVET 00BE142, Department of Naval Architecture and Marine Engineering, NTUA, March 2003.

32. Mavrakos, S.A., Georgatzis, A., Katsaounis, G.: "Hydrodynamic analysis of an array of floating wave energy converters", Technical Report (in Greek) on the framework of the research project: "Construction of a demonstration plant for the electricity production from the waves" supported by the Greek General Secretariat for Research and Technology, PAVET 00BE142, Department of Naval Architecture and Marine Engineering, NTUA, April 2003.
33. S.A. Mavrakos, G. Katsaounis, M. Giakoumis, G. Lemonis, K. Nielsen, W. Beattie, R. Alcorn, A. Stasinopoulos: "Scale Model Experiments", Deliverable D7, Technical Report for the Research Project LABBUOY supported by the EU, Contract No ENK6 - CT2001 - 00500, Department of Naval Architecture and Marine Engineering, NTUA, September 2003.
34. S.A. Mavrakos, G. Katsaounis, G. Lemonis: "Validation of simulation models", Deliverable D8, Technical Report for the Research Project LABBUOY supported by the EU, Contract No ENK6 - CT2001 - 00500, Department of Naval Architecture and Marine Engineering, NTUA, December 2003.
35. S.A. Mavrakos, G. Katsaounis: "Hydrodynamic Analysis and Efficiency Evaluation of a tightly moored wave energy converter", Technical Report to the KIMATIKI ENERGEIA S.A., School of Naval Architecture and Marine Engineering, September 2004.
36. S. A. Mavrakos, P. Bourma, I. Thanos : "Mean Wind and Current Loads on GIFT terminal and its assembly with LNGC, Report no: N° 65-1873-NTM-G-TR-300, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Nov. 2005.
37. S.A. Mavrakos, P. Bourma, I. Thanos : " Spectra of slowly-varying excitation environmental forces (wind and wave), Report no: N° 65-1873-NTM-N-RE-309, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Dec. 2005.
38. S.A. Mavrakos, I. Thanos, Th. Mazarakos: "Hydrodynamics of GIFT Assembly (first-order)", Report no: N° 65-1873-NTM-N-TR-305, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Dec. 2005.
39. S.A. Mavrakos, M.S. Triantafyllou, I. Thanos, Th. Mazarakos: "Thruster Loads Preliminary Estimate", Report no: N° 65-1873-NTM-N-CN-301, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Jul. 2005.

40. S.A. Mavrakos, M.S. Triantafyllou: "Equivalent Transfer function representing control system action", Report no: N° 65-1873-NTM-M-RE-308, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Dec. 2005.
41. S.A. Mavrakos, J. Chatjigeorgiou: "Preliminary Estimate of the Scale-down model for GIFT's Mooring System", Report no: N° 65-1873-NTM-N-CN-302, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Jul. 2005.
42. S.A. Mavrakos, J. Chatjigeorgiou: "Static and Dynamic Analysis of GIFT's mooring arrangement under survival conditions", Report no: N° 65-1873-NTM-N-CN-303, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Dec. 2005.
43. S.A. Mavrakos, J. Chatjigeorgiou: "Quasi-Static Motion Response Analysis of the Moored GIFT Terminal in Survival Conditions – First Comparisons with Experimental Data", Report no: N° 65-1873-NTM-N-RE-300, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Dec. 2006.
44. S.A. Mavrakos, J. Chatjigeorgiou: "Mooring Line Induced Damping and Bottom – Line Interaction Effects for the Moored GIFT Terminal", Report no: N° 65-1873-NTM-N-CN-305, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, Jan. 2006.
45. S.A. Mavrakos, I. Thanos, S. Tsiloukas, Th. Grapsas: "The Floating GIFT Terminal as a coupled dynamical system – Preliminary calculations", Report no: N° 65-1873-NTM-M-RE-304, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, March 2006.
46. S.A. Mavrakos, I. Thanos, P. Bourma: "Spectra of slowly-varying excitation environmental loads (wind, waves), Report", Report no: N° 65-1873-NTM-N-RE-309, Technical Report for the Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, March 2006.
47. Mavrakos, S.A.: "Investigation of the Seaworthiness of a floating Wind Farm using suitable materials due to extreme environmental conditions", Interim evaluation report submitted to the WEGEMT for

- the program VISIONS (2006). Contract N°VL1C18-I10EF3.1, September 2006.
48. Mavrakos, S.A.: "Investigation of the Seaworthiness of a floating Wind Farm using suitable materials due to extreme environmental conditions", Final evaluation report submitted to the WEGEMT for the program VISIONS (2006). Contract N°VL1C18 - I10EF3.1, November 2006.
 49. Mavrakos, S.A.: "Investigation of the in-situ modularization and connection possibilities of the wind farm modulus and their transport to the assembly location", Interim evaluation report submitted to the WEGEMT for the program VISIONS (2006). Contract N°VL1C19-I10EF3.2, September 2006.
 50. Mavrakos, S.A.: "Investigation of the in-situ modularization and connection possibilities of the wind farm modulus and their transport to the assembly location", Final evaluation report submitted to the WEGEMT for the program VISIONS (2006). Contract N°VL1C19-I10EF3.2, December 2006.
 51. Mavrakos, S.A., Thanos, I., Bourma, P., "Mean Second Order Wave Loads on GIFT Assembly in Sea Waves" Report no: N° 65-1873-NTM-N-TR-307, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, July 2006.
 52. Chatjigeorgiou, I.K., Mavrakos, S.A. "Static and Dynamic Analysis, Mooring Line Induced Damping, Bottom Line Interaction Effects", Report 65-1873-NTM-N-TR-312, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, January 2007.
 53. Mavrakos, S.A., Grapsas, Th., Vasiliades, V.: "De-coupled Motion response Analysis in the Frequency Domain, Mooring Line Loads", Report 65-1873-NTM-N-TR-313, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, March 2007.
 54. Mavrakos, S.A., Grapsas, Th., Thanos, I., Ioannides, M.: "First order motions of the moored floating terminal (RAO's, Spectra, significant, maximum values), Report 65-1873-NTM-N-RE-301, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, February, 2007.
 55. Mavrakos, S.A., Chatjigeorgiou, I.K., Bourma, P., Mazarakos, Th., Vasiliades, V., Ioannides, M.: "Low frequency motions and damping components: motion's amplitudes, significant, and maximum values, Report. 65-1873-NTM-N-RE-302, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture

- and Marine Engineering, Division of Marine Structures, NTUA-NTM, January, 2007.
56. Mavrakos, S.A., Chatjigeorgiou, I.K., Mazarakos, Th., Bourma, P., Vasiliades, V., Grapsas, Th.: "Dynamic analysis of mooring lines in maximum excursion (mean + first order + low frequency)", Report 65-1873-NTM-N-RE-303, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, March 2007.
 57. Mavrakos, S.A., Thanos, I., Vasiliades, V.: "Coupled Hydro - mechanic Response Analysis in the Time Domain of the Moored LNG terminal: Vessels' Motions, Line Tensions", Report 65-1873-NTM-N-TR-314, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, March 2007.
 58. Mavrakos, S.A., Thanos, I., Bourma, P., Tranoudis, G., Christidoulou, K., Maroglou, D.: "Time domain simulations; calculation of motions and line tensions in operating and survival conditions - Comparison between frequency and time domain numerical predictions", Report 65-1873-NTM-N-RE-306, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, January 2007.
 59. Mavrakos, S.A., Thanos, I., Grapsas, Th., Christodoulou, K.: "Estimation of transversal Thruster's Power", Report 65-1873-NTM-N-TR-315, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, January 2007.
 60. Mavrakos, S.A., Thanos, I., Grapsas, Th., Maroglou, D., Triantafyllou, M.S.: "Derivation of output spectrum, including effect of mooring system, power estimation", Report 65-1873-NTM-M-RE-311, Report 65-1873-NTM-N-TR-315, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, December 2006.
 61. Mavrakos, S.A., Papanikolaou, A., Thanos, I., Spanos, D., Mourkoyiannis, D., Mazarakos, Th., Bourma, P., Grapsas, Th., Vasiliades, V., Ioannides, M., Christodoulou, K., Argyropoulos, M.: 'Analysis of experimental data and validation of simulations from model test results, Report 65 - 1873 - NTM - N - TR - 318, Research Project GIFT supported by the EU, Contract No TST4-CT-2004-12404, School of Naval Architecture and Marine Engineering, Division of Marine Structures, NTUA-NTM, March 2006.
 62. Mavrakos, S.A.: "Parametric evaluation of the flow field and of the collision energy on the side walls of the Corinth channel during the towing procedure of large cruisers" (in Greek), Technical Report to the

- “DIORYGA KORINTHOU S.A.”, Laboratory for Floating Structures and Mooring Systems, NTUA, October, 2006.
63. Mavrakos, S.A.: “Interrelations between vessels and their behaviour in wind and waves”, Interim evaluation report submitted to the WEGEMT for the program VISIONS (2007), Contract No VL2C22-I40EF5.2, August 2007.
 64. Mavrakos, S.A.: “Interrelations between vessels and their behaviour in wind and waves”, Final evaluation report submitted to the WEGEMT for the program VISIONS (2007), Contract No VL2C22-I40EF5.2, September 2007.
 65. Mavrakos, S.A.: “Coupling of dynamically positioned large modular structures”, Interim evaluation report submitted to the WEGEMT for the program VISIONS (2007), Contract No VL2C03-I40EF2.1, September 2007.
 66. Mavrakos, S.A.: “Coupling of dynamically positioned large modular structures”, Final evaluation report submitted to the WEGEMT for the program VISIONS (2007), Contract No VL2C03-I40EF2.1, October 2007.
 67. Mavrakos, S.A.: «Wave propagation and motion response analysis of large Cruiser ships berthed in the new Katakolo Harbor” (in Greek), Supported by the Prefecture of Western Greece, Technical Report, Laboratory for Floating Structures and Mooring Systems, NTUA, June, 2007.
 68. Mavrakos, S.A., Chatjigeorgiou, J.: «Floating Thermal Station and Anahita Island”, Final Evaluation Report submitted to the WEGEMT for the program VISIONS (2008), Contract No VL3C10-I0720EF5.1, September 2008.
 69. Mavrakos, S.A.: “Hydrodynamic analysis of the cable – laying vehicle “ATALANTI” (in Greek), Technical Report to the KREOUSA SHIPPING COMPANY Ltd., Laboratory for Floating Structures and Mooring Systems, NTUA, July 2009.
 70. Mavrakos, S.A., Mazarakos, T.P.: “Motions’ response amplitude operators (RAO’s) for the special purpose vessel ASTREA”, Technical Report to the KREOUSA SHIPPING COMPANY Ltd., Laboratory for Floating Structures and Mooring Systems, Report Nr. LFSMS-3-2012 NTUA, April 2012.
 71. Mavrakos, S.A., Mazarakos, T.P.: “Motions’ response amplitude operators (RAO’s) for the special purpose vessel ATALANTI”, Technical Report to the KREOUSA SHIPPING COMPANY Ltd., Laboratory for Floating Structures and Mooring Systems, Report Nr. LFSMS-5-2012 NTUA, May 2012.
 72. Mavrakos, S.A.: “Mooring System Analysis for the OC3 Spar Buoy (SB) floating wind turbine concept applicable to the experimental campaign within HYDRALAB IV program in DHI, Program No. HyIV – DHI – 01, June 2012, Laboratory for Floating Structures and Mooring Systems, Rep. No.: LFSMS-6C-2012.

73. Wolbring, J., Armenio, E., D' Alessandro, Katsaounis, G.: "Dynamic response of floating offshore wind turbines under random waves and wind action – Data Storage Plan", HYDRALAB IV, Offshore wave basin, DHI, Rep. No. HyIV – DHI – 01, October 2012.
74. Tomasicchio, G.R., D' Alessandro, F., Armenio, E., Wolbring, J., Mavrakos, S.A., Katsaounis, G., Mazarakos, Th., Manolas, D., Fonseca, N., Penchev, V.: "Dynamic response of floating offshore wind turbines under random waves and wind action – Data Storage Report", HYDRALAB IV, Offshore wave basin, DHI, Rep. No. HyIV – DHI – 01, January 2013.
75. Mazarakos, Th., Dimou, D., Grapsas, Th., Polyzos, S., Tzabiras, G., Mavrakos, S.A.: "Basic design characteristics of the floating supporting structure with its components" (in Greek), Deliverable D1.2, Program POSEIDON, ARISTEIA 2041, September 2013.
76. Polyzos, S., Dimou, D., Mazarakos, Th., Grapsas, Th., Mavrakos, S.A., Tzabiras, G.: "Design of the experiment and of the experimental set up" (in Greek), Deliverable D4.2, Program POSEIDON, ARISTEIA 2041, December 2013.
77. Mazarakos, Th., Katsaounis, G., Manolas, D., Riziotis, V., Chatjigeorgiou, I.K., Voutsinas, S., Mavrakos, S.A., Rossis, K., Chaviaropoulos, P.: "Determination of the W/T components characteristics" (in Greek), Program AYRA, SYNERGASIA 2009, Deliverable D3.2, December 2013.
78. Mazarakos, Th., Grapsas, Th., Mavrakos, S.A.: "Hydrodynamic analysis of the floating supporting structure with the oscillating water column device" (in Greek), Deliverable D2.1, Program POSEIDON, ARISTEIA 2041, January 2014.
79. Papadakis, G., Riziotis, V., Voutsinas, S., Mazarakos, Th., Mavrakos, S.A.: "Adjustment of the computational tools" (in Greek), Deliverable D3.1, Program POSEIDON, ARISTEIA 2041, January 2014.
80. Papadakis, G., Riziotis, V., Voutsinas, S., Mazarakos, Th., Dimou, D., Mavrakos, S.A.: "Design of the scaled – down W/T" (in Greek), Deliverable D4.1, Program POSEIDON, ARISTEIA 2041, January 2014.
81. Mazarakos, Th., Mavrakos, S.A.: "Dimensioning and static and dynamic analysis of the mooring system" (in Greek), Deliverable D2.1, Program POSEIDON, ARISTEIA 2041, March 2014.
82. Papadakis, G., Riziotis, V., Voutsinas, S., Mavrakos, S.A.: "Reduced order aeroelastic models" (in Greek), Deliverable D3.2, Program POSEIDON, ARISTEIA 2041, March 2014.
83. Papadakis, G., Riziotis, V., Voutsinas, S., Mazarakos, Th., Polyzos, S., Dimou, D., Mavrakos, S.A.: "Analysis of the coupled system in full scale" (in Greek), Deliverable D3.3, Program POSEIDON, ARISTEIA 2041, April 2014.
84. Manolas, D., Voutsinas, S., Katsaounis, G., Mazarakos, Th., Chatjigeorgiou, I.K., Mavrakos, S.A.: "Method for the determination of the coupled dynamic behavior of floating W/T in the frequency

domain”(In Greek), Program AYRA, SYNERGASIA 2009, Deliverable D3.3, May 2014.

10. PARTICIPATION IN RESEARCH PROJECTS

1. "Wave loads and motion characteristics of large offshore structures in waves", sponsored by the Ministry for Science and Research of North Rhine-Westphalia, 1976-1979 (researcher).
2. "Optimization of large compact offshore structures in the design phase", sponsored by the Ministry for Science and Research of North Rhine-Westphalia, 1978-1979 (researcher).
3. "Dynamic behavior of fluids confined in partially filled oscillating tanks", sponsored by the German Ministry for Research and Technology, 1979-1982 (researcher).
4. "Hydrodynamic Analysis of Semi-Submersibles", sponsored by the Greek Ministry for Research and Technology, 1984-1986 (co-principal investigator).
5. "Feasibility Study for Deep Water Anchoring Systems", sponsored by the Hydrocarbon Division, Energy Directorate, EU, 1986-1988 (scientific responsible).
6. "Use of Buoys to Reduce Static and Dynamic Tension in Deep Water Mooring Lines: A Pilot Study", sponsored by the Hydrocarbon Division, Energy Directorate, EU, 1988-1990 (scientific responsible).
7. "Design Rules for floating Marinas", sponsored by the Hellenic Tourism Organization, 1989-1990 (scientific responsible).
8. "Deep Water Sub-sea System Servicing through the Surface: A Technology Transfer", sponsored by the Energy Directorate (THERMIE Program), C.E.C., 1991-1994 (co-principal investigator).
9. "Offshore Wave Energy Converters (OWEC-1)", sponsored by the General Directorate for Research and Development, Program JOULE II, EU, 1993-1995 (scientific responsible for the part carried out in NTUA).
10. "Experimental and numerical investigation on the hydrodynamic behavior of floating breakwaters", sponsored by the Greek General Secretariat for Research and Technology, 1993-1995 (principal investigator).
11. "Design of the Mooring System for three Floating Docks", sponsored by the Greek Navy, 1995 (scientific responsible).
12. "Optimization of the design procedures for harbor works: Application to the Harbors of Alexandroupoli, Lagos and Kavala", sponsored by the Greek General Secretariat for Research and Technology, 1996-1998 (scientific responsible for the NTUA part).
13. "Development of a Post - Graduate Course in "Marine and Ocean Engineering and Science" in the School of Naval Architecture and Marine Engineering, NTUA, Supported by the Greek Ministry for Education and Religions, 1/1/1997 - 29/2/2000, Scientific Responsible.
14. «Development of Rules and Regulations for the Design, Construction and Certification of Floating Marinas and Floating Recreational structures", two-year (1999 - 2001) research project PAVET (97BE142)

- sponsored by the Hellenic Register of Shipping (Scientific responsible for the project part carried out at NTUA).
15. «Design of DELTA BERENIKE floating offshore structure for the deployment of the instrumentation for the neutrino monitoring Laboratory NESTOR», one-year project (2000), sponsored by the NESTOR Laboratory (scientific responsible).
 16. “Updating of the Post-Graduate Program in “Marine and Ocean Technology and Science” in the School of Naval Architecture and Marine Engineering, NTUA, Supported by the Greek Ministry for Education and Religions, 1/9/2001 - 31/12/2003, Scientific Responsible.
 17. «Development and Construction of a Prototype Electricity generation plant from sea waves”, two-years project (1/12/2001 – 30/11/2003) sponsored by the Greek General Secretariat for Research and Technology (program code: 00BE142), carried out in collaboration with the Greek Construction Company ATHENA, S.A., The National Center for Renewable Energy and the Department of Electrical Engineering of the NTUA (scientific responsible for the work carried out in the Department of Naval Architecture and Marine Engineering).
 18. “Mapping of the sea bed in the Gulf of Lefka, Island of Nisiros”, Program of the Underwater Archaeological Authority of Greece, decision of the Ministry for Culture No YΠΠΙΟ/ΑΡΧ/Α1/Φ41/30517 /1870, carried out in collaboration with the National Centre for Marine Research (NCMR) and the Ocean Engineering Department of the Massachusetts Institute of Technology, June 2001 (Scientific Responsible and participating from the site of the School of Naval Architecture and Marine Engineering in the field tests)
 19. «Thematic Network on Floating Structures Technology – FLOATECH», four-year (1.7.2001 – 30.6.2005) research project sponsored by the Research General Direction of the E.U. in collaboration with 37 European institutions from the Academia and Industry (scientific responsible for the part carried out in the Department of Naval Architecture and Marine Engineering, NTUA).
 20. LABBUOY: «Economically Efficient Floating Device for Wave Power Conversion into Electricity; Phase I: Mathematical and Physical Model Testing», Two-year (1/1/2002 – 31/12/2003), European Research Project, sponsored by the Direction General for Energy (scientific responsible for the part carried out in the Department of Naval Architecture and Marine Engineering, NTUA).
 21. “Measurements of drift forces, wave run-up and air gap on offshore structures”, Research Project sponsored by the European Commission in the framework of the “Transnational Access to Research Infrastructures”, carried out in the wave basin of EL PRADO MODEL BASIN (Canal de Experiencias Hidrodinamicas de El Prado, Madrid, Spain).
 22. “Co-ordination action on Ocean Energy”, three-year (1.10.2004 – 30.9.2007) project, sponsored by the European Commission, Contract

- No: 502701. The program is carried out in collaboration of 40 European Institutions from the Academia, Industry and Developer, (scientific responsible for the part that is carried out in NTUA).
23. "Hydrodynamic and Hydroelastic Analysis of moored floating or constrained vertical axisymmetric bodies for applications as wave energy converters", Three-year research project (1.3.2004 – 28.2.2006), sponsored by the Greek Ministry for Education, Program PYTHAGORAS (scientific responsible).
 24. "Gas Import Floating Terminal – GIFT", Two-year research project (1.2.2005 – 31/1/2007), sponsored by the Direction for Transport, Project No: 012404, in collaboration with DORIS Engineering (France), LMC (UK), DnV (Norway), CAT(France), Ship Design Laboratory of the National Technical University of Athens (Greece), (scientific responsible of the NTUA-Marine Division Part).
 25. "Design of an autonomous underwater oceanographic monitoring vehicle droved by changing buoyancy", Three-year project, sponsored by the Greek Secretariat for Research and Technology, PENED 2003 and the private company AMTECH Ltd., (scientific responsible).
 26. "Wave – Current – Vertical Cylinder Array interaction", Two-year research project (1.1.2005 – 31.12.2006), sponsored by the Greek Ministry for Education, PYTHAGORAS II (principal investigator).
 27. "Measurements of hydrodynamic forces and motions on concentric vertical cylinders", Sponsored by the EU within the 6th FP under the action: "Integrated Infrastructure Initiative HYDRALAB III: Assess to major experimental facilities" carried out in the wave basin of EL PARDO, Madrid, Spain (Canal de Experiencias Hidrodinamicas de El Prado -CEHIPAR), principal investigator, November 2009.
 28. "Wave current interaction with vertical cylinders", Sponsored by the EU in the framework of METRI – 2 (Marine Environment Tests and Research Infrastructure 2) program, Contract Nr. HPRI-CT-2001-156. The experimental campaign was carried out in IFREMER, Brest, France, (scientific responsible), May 2009.
 29. "Experimental and numerical evaluation of the drift forces on a floating body of simple geometry (vertical cylinder)", Sponsored by the EU within the 6th FP under the action: "Integrated Infrastructure Initiative HYDRALAB III: Assess to major experimental facilities" carried out in DHI Wave Basin, Copenhagen, Denmark Contract No: 022441 (RII3), (Scientific responsible for the NTUA part), June 2009.
 30. "Hydrodynamic analysis of floating oscillating water column wave energy devices for offshore applications", Three-year project (1/9/2010 – 31/8/2013), Sponsored by the Greek Ministry for Education, Long-life learning and Religions, HERACLITOS II Program, Contract No MIS346725, (Scientific Responsible)
 31. AYRA: "Setting-up of a National Program for the exploitation of the offshore wind energy sources in the Aegean Sea", Three years program (2011- 2014), Supported by the Greek General Secretariat for Research

- and Technology, Program SYNERGASIA 2009 (scientific responsible for the part of the work to be conducted in NTUA)
32. “Dynamic response of floating offshore wind turbines under random waves and wind action”, funded by the EU within the 7th FP under the action: “Integrated Infrastructure Initiative HYDRALAB IV: Assess to major experimental facilities”, Carried out in DHI Wave Basin, Copenhagen, Denmark (Scientific responsible for the NTUA part), 06/2012 – 06/2013.
 33. “Multi-purpose floating structures for offshore wind and wave energy sources exploitation (POSEIDON)”, Three years program (2012 – 2015), Supported by the Greek General Secretariat for Research and Technology, Program ARISTEIA 2011, (coordinator and scientific responsible), <http://aristeia-poseidon.naval.ntua.gr/>
 34. JABACO: “Development of Modular Steel Jacket for Offshore Wind Farms”, 42 months program (1/7/2015 – 31/12/2018), Funded by the EC, Research Fund for Coal and Steel, Grant Agreement No RFSR – CT – 2015 – 00024, <https://op.europa.eu/en/publication-detail/-/publication/8197a1cb-726a-11eb-9ac9-01aa75ed71a1/language-en/format-PDF/source-207641736>, scientific responsible
 35. REFOS: “Life – Cycle Assessment of a Renewable Energy Multi – Purpose Floating Offshore System”, 42 months program (1/7/2016 – 31/12/2019), Funded by the EC, Research Fund for Coal and Steel, Grant Agreement No 709256 – REFOS – RFSR – 2015, coordinator and scientific responsible, www.refos-project.eu
 36. FIRST – WIRE: “Fiber Reinforced Steel WIRES for high performance lightweight ropes and cables operating in demanding scenarios” EC, Research Fund for Coal and Steel (RFCS), RFCS-02-2019 Grant Agreement No – 899299 /28-5-202036 months program (1/6/2020 – 31/5/2023), Scientific Responsible, <https://firstwire.eu/>

11. CONSULTANCY SERVICES TO THE INDUSTRY AND VARIOUS BODIES

1. "Feasibility Study for the Development of Floating Swimming Pools", consultant service sponsored by Touliel S.A., 1991-1992 (scientific responsible).
2. "Development of a New concept for Open Sea Fish Farming", consultant service sponsored by Thalassa S.A., 1991-1993 (scientific responsible).
3. "Mooring system design for a pipe-laying vessel operating in the route Igoumenitsa-Corfu", consultant service sponsored by the Greek Company FULGOR S.A., 1994 (scientific responsible).
4. "Mooring system design for a pipe-laying vessel operating in the route Preveza-Corfu", consultant service sponsored by the Greek Company FULGOR S.A., 1994 (scientific responsible).
5. «Hydrodynamic analysis for the change in use of the Jack-up "ANDROS", one-year project (2001) sponsored by the Greek construction company ATHENA S.A. (scientific responsible), consultant service.
6. "Preliminary design of a floating garage for the Volos Harbor", consultant service sponsored by the Volos Harbor Authorities, 2003
7. «Numerical Evaluation of the Efficiency of a tightly moored wave energy converter", consultant Service to the company KIMATIKI ENERGEIA S.A., September 2004, (scientific responsible).
8. "Investigation of the Seaworthiness of floating Wind Farm using suitable materials due to extreme environmental conditions", Consultant services to WEGEMT (West European Graduate Education in Marine Technology) within the EU project VISIONS, Contract N°VL1C18 - I10EF3.1, 2006.
9. "Investigation of the in-situ modularization and connection possibilities of the wind farm modulus and their transport to the assembly location", Consultant services to WEGEMT (West European Graduate Education in Marine Technology) within the EU project VISIONS, Contract N°VL1C19-I10EF3.2, 2006.
10. "Navigation Study and Parametric evaluation of the flow field and the collision energy on the side walls of the Corinth channel during the towing procedure of large cruisers", sponsored by the CORINTH CHANNEL S.A., 2006, scientific responsible, consultant services.
11. "Interrelations between vessels and their behavior in wind and waves", Consultant services to WEGEMT (West European Graduate Education in Marine Technology) within the EU project VISIONS, Contract No VL2C22-I40EF5.2, 2007.
12. "Coupling of dynamically positioned large modular structures", Consultant services to WEGEMT (West European Graduate Education in Marine Technology) within the EU project VISIONS, Contract No VL2C03-I40EF2.1, 2007.

13. «Wave propagation and motion response analysis of large Cruiser ships berthed in the new Katakolo Harbor, Prefecture of Ilia, Greece», Consultant services sponsored by the Prefecture of Ilia, June, 2007.
14. «Floating Thermal Station and Anahita Island», Consultant services to WEGEMT (West European Graduate Education in Marine Technology) within the EU project VISIONS, Contract No VL3C10-I0720EF5.1, 2008.
15. “Hydrodynamic analysis of the cable – laying vehicle “ATALANTI”, sponsored by the KREOUSSA Shipping Company, Ltd., July 2009, consultant services.
16. Motion response analysis of two cable – laying ships (ASTREA and CREOUSSA), Sponsored by the KREOUSSA Shipping Company, Ltd., (Dec. 2011 – March 2012), consultant services.
17. “Design of the Mooring Arrangement for the anchoring and maneuvering characteristics of an oil tanker 30000DWT in the Kavala Gulf, Greece, during loading and unloading operations”, consultancy to the Greek Marine Development Company MARNET S.A., July 2018.
18. Study of maneuvering characteristics of an oil tanker 35000DWT in Kalochori, Thessaloniki, Greece, during loading and unloading operations”, consultancy to the Greek Marine Development Company MARNET S.A., November 2018.

12. DEVELOPED COMPUTER CODES

1. **CYLINDER-R:** Solves the linearized diffraction – radiation problems of an arbitrarily shaped vertical axisymmetric body in the presence of regular surface waves. First – order exciting wave forces, hydrodynamic parameters, motions and mean – second order wave forces are evaluated.
2. **HAMVAB** (Hydrodynamic Analysis of Multiple Vertical Axisymmetric Bodies): Solves the linearized diffraction-radiation problems for the interaction between waves and multiple vertical axisymmetric bodies of arbitrary shape that can be free-floating or moored. The first-order loads, hydrodynamic parameters, motions and the mean drift-forces on the isolated and the entire structure configuration are calculated in monochromatic and irregular seas.
3. **CON-CYLINDER:** Solves the linearized body – wave interaction problem (diffraction – radiation) between independently moving concentric vertical cylinders and planar linear wave trains. Exciting wave forces to the first – order, hydrodynamic coefficients and first – order motions are evaluated in the frequency domain.
4. **H.A.S.I.S:** Solves the linearized diffraction-radiation problems for the interaction between waves and arbitrarily shaped large-volume single or multiple bodies through the distribution of the $1/r$ source on the body's wetted surface, the free – surface, the sea – bottom and on a vertical control cylinder surrounding the body. The velocity potential outside of the vertical control cylinder is approximated by its analytical representation. First-order loads and motions and the mean drift-forces in 3 DOF (using momentum conservation principle) are evaluated in monochromatic and irregular seas.
5. **FLOATSYS:** Evaluation of the first- and mean-second order loads on semi-submersibles and arrangements of arbitrarily shaped interconnected moored structures using diffraction and Morison type loads. The motion response analysis is carried out in the frequency domain. Calculation of RAO's of shear forces and forces at the interconnections.
6. **RETARF:** Based on the frequency – domain analysis results, the RETARF code calculate the retardation functions to be used in the time domain analysis code TIMESYS.
7. **TIMESYS:** Calculates the first- and mean- and slowly-varying loads on semi-submersibles and on interconnected moored floating bodies of small- or large-volume using both diffraction and Morison-Type loading. The equations of motions are solved in the time domain. Time histories of the body motions and of the tensions in the mooring lines can be calculated together with the forces at the connections.
8. **CYLINDER2-R:** Extends CYLINDER-R for the solution of the second – order sum- and difference-frequency diffraction problem for an arbitrarily shaped vertical axisymmetric body using assisting radiation potential. Second – order sum- and difference frequency exciting wave forces and moments are evaluated.

9. **WINDCURR:** Evaluation of mean wind and current loads on ships and offshore structures.
10. **SLOSH:** Evaluation of the eigenfrequencies and the dynamic loads on arbitrarily shaped vertical axisymmetric tanks due to sloshing of liquids.
11. **DESCABLE:** Design of multi-leg mooring systems with submerged attached buoys and combination of materials. Evaluation of the required length, diameter and weight per length for given external forces and water depth.
12. **XMOOR:** Evaluation of the mean static equilibrium position of moored floating structures anchored through pre-tensioned synthetic lines and subjected to the action of mean loadings from waves, wind and currents. Evaluation of the lines' elongations and maximum loads.