

CURRICULUM VITAE OF GEORGE D. TZABIRAS

ADDRESS Home : FILIS 192, ATHENS 11251, GREECE

Office : National Technical University of Athens (NTUA)
School of Naval Architecture and Marine Engineering
Heron Polytechniou 9, Zografos 15773, Athens, GREECE

Tel : +30 210 772 1107 (Office)

Fax : +30 210 772 1397

e-mail : tzab@fluid.mech.ntua.gr

DATE OF BIRTH : February 28th, 1952

PLACE : Piza, Italy

NATIONALITY : GREEK

UNIVERSITY STUDIES

1. Diploma on Naval Architecture and Marine Engineering, Department of Naval Architecture and Marine Engineering (NAME), National Technical University of Athens (NTUA), 1975
2. Diploma in Mechanical Engineering, Department of Mechanical Engineering, NTUA, 1978

DISSERTATION

Doctorate in Ship Hydrodynamics, Department of Naval Architecture and Marine Engineering, NTUA, 1984. Title of Thesis: Numerical and experimental investigation of the turbulent flow-field around the stern of double ship models. Supervisor: Prof. T. A. Loukakis.

PROFESSIONAL EXPERIENCE

1979-1984 Research assistant, Dept. of NAME, NTUA

1985-1987 Lecturer, Dept. of NAME, NTUA

1987-1991 Assistant Professor, Dept. of NAME, NTUA

1992-1997 Associate Professor, Dept. of NAME, NTUA

1997- Professor, Dept. of NAME, NTUA

2001-2003 President of the School of NAME, NTUA

2005- Director of the Laboratory for Ship and Marine Hydrodynamics (LSMH), NTUA

SCIENTIFIC INTERESTS

Theoretical and experimental hydrodynamics. Development of numerical methods and computer codes for hydrodynamic applications. Ship and marine hydrodynamics.

Publications of G.Tzabiras

(a) Journals

- 1) G. Tzabiras, G. Bergeles and N. Athanassiadis **“Critical examination of the methods for the calculation of the boundary layer development on aerofoils”** (in Greek), Technica Chronica Sc. Journal of the Tech. Chamber of Greece, 1, 1980, pp. 45-55
- 2) G.D. Tzabiras and T.A. Loukakis, **“A method for predicting the flow around the stern of double ship hulls”**, Int. Shipbuilding Progress, 2, 1983, pp. 94-105
- 3) G.D. Tzabiras, A. Dimas and T.A. Loukakis, **“A numerical method for the calculation of incompressible, steady, separated flows around aerofoils”**, Int. J. for Numerical Methods in Fluids, 6, 1986, pp. 789-809
- 4) G.D. Tzabiras, **“A numerical investigation of the turbulent flow-field at the stern of a body of revolution”**, Journal of Applied Mathematical Modelling, 11, 1987, pp. 45-61
- 5) G. Tzabiras, J. Antoniou and T. Loukakis, **“Numerical and experimental investigation of the pressure field around a body of revolution at incidence”**, Z.Flugwiss. Weltraumforsch., 14, 1990, pp. 315-326
- 6) G.D. Tzabiras, **“A numerical study of the turbulent flow around the stern of ship models”**, Int. J. for Numerical Methods in Fluids, 9, November 1991, pp. 1179-1204
- 7) G.D. Tzabiras, **“A numerical investigation of the Reynolds scale effect on the resistance of bodies of revolution”**, Ship Technology Research, 39, February 1992, pp. 28-44
- 8) G.D. Tzabiras, **“Numerical calculation of resistance and propulsion characteristics of a body of revolution”**, Technica Chronica Sc. Journal of the Tech. Chamber of Greece, 11, 1991, pp.85-118
- 9) G.D. Tzabiras, **“Resistance and self propulsion numerical experiments on two tankers at model and full scale”**, Ship Technology Research, 40, February 1993, pp. 20-38
- 10) G.D. Tzabiras, **“On the calculation of the viscous flow around bulbous or U-shaped bows at zero Froude number”**, Ship Technology Research, 42, February 1995, pp. 31-44
- 11) G.D. Tzabiras, **“Numerical and experimental study of the pressure field around a double ship model”**, Technica Chronica Sc. Journal of the Tech. Chamber of Greece, 15,

1995, pp. 41-51.

12) G.D. Tzabiras **“Numerical prediction of self-propulsion characteristics of full ship forms”** STG-Yearbook, vol. 89, 1995, pp. 322-326

13) G.D. Tzabiras, **“A numerical study of actuator disk parameters affecting the self-propulsion of a tanker”**, International Shipbuilding Progress, April 1996, pp. 5-47

14) G.D. Tzabiras, **“A numerical study of additive bulb effects on the resistance and self-propulsion characteristics of a full ship form”**, Ship Technology Research, 44, May 1997, pp. 98-108

15) G.D. Tzabiras, **“A numerical investigation of 2D, steady free surface flows”**, Int. J. for Numerical Methods in Fluids, 25, 1997, pp. 567-598.

16) Y. Ventikos and G. Tzabiras, **“A numerical method for the simulation of steady and unsteady cavitating flows”**, Computers and Fluids, 29, 2000, pp. 63-88

17) P. Chaviaropoulos, I. Nikolaou, A. Aggelis, N. Soerensen, J. Johansen, M. Hansen, M. Gaunaa, T. Hambrus, H. von Geyr, C. Hirsch, k. Shun, S. Voutsinas, G. Tzabiras, Y. Perivolaris, S. Dyrmoose, **“Viscous and aeroelastic effects on wind turbine blades. The VISCEL project. Part I: 3D Navier-Stokes rotor simulations”**, Wind Energy, 6, 2003, pp. 365-385

18) P. Chaviaropoulos, I. Nikolaou, A. Aggelis, N. Soerensen, J. Johansen, M. Hansen, M. Gaunaa, T. Hambrus, H. von Geyr, C. Hirsch, k. Shun, S. Voutsinas, G. Tzabiras, Y. Perivolaris, S. Dyrmoose, **“Viscous and aeroelastic effects on wind turbine blades. The VISCEL project. Part II: Aeroelastic stability investigations”**, Wind Energy, 6, 2003, pp. 387-403

19) Y. Hoarau, M. Braza, Y. Ventikos, D. Faghani and G. Tzabiras, **“Organised modes and the 3D transition to turbulence in the incompressible flow around a NACA0012 wing”** JFM, 496, 2003, pp. 63-72

20) G.D. Tzabiras, **“Resistance and Self-propulsion simulations for a Series-60, $C_B=0.6$ hull at model and full scale”**, Ship Technology Research, 51, 2004, pp. 21-34

21) G.D. Tzabiras, **“A numerical investigation of free and forced transition effects on hydrofoil characteristics”**, Ship Technology Research, 55, 2008, pp. 115-130

22) G. Tzabiras and K. Kontogiannis, **“An integrated method for predicting the hydrodynamic performance of low- C_B ships”**, Computer-Aided Design Journal, 42, 2010, pp 985-1000

23) G. Tzabiras, S. Polyzos, K. Sfakiannaki, V. Diafas, A. Villiotis, K. Chrisikopoulos and S. Kalouptsis, **“Experimental and Numerical Study of the Flow past the Olympic**

Class K-1 Flat Water Racing Kayak at Steady Speed", The Sport Journal, vol. 13, no 4, 2010, pp. 1-15

(b) Conferences (full-paper refereed or invited)

1) G. D. Tzabiras, "**On a method for the calculation of turbulent flow at the stern of double models**", Conference on Seagoing Qualities of Ships and Marine Structures, Varna, September 1983, pp. 39.1-39.11

2) G. D. Tzabiras, "**On the calculation of the Reynolds stress tensor by two algorithms**", Second Int. Symposium on Ship Viscous Resistance, Goteborg, 1985, pp. 15.1-15.18

3) G. Tzabiras, T. Loukakis, J. Antoniou, "**Numerical-Experimental investigation of the mean velocity vector at the stern of a double model**", 4th Int. Congress of Marine Technology, Varna, May 1987, pp. 14.1-14.8

4) G. Tzabiras, E. Hytopoulos, G. Nassos, "**On the numerical calculation of the turbulent flow-field around bodies of revolution**", 2nd Int. Conference on Computer Aided Design, Manufacture and Operation in the Marine and Offshore Industries (CADMO 88-book), Southampton, 1988, pp. 31-47

5) G. Tzabiras, G. Nassos "**Numerical investigation of the turbulent flow-field around a body of revolution at incidence**", 4th Int. Conference in Computational Methods and Experimental Measurements, 1989, Capri, pp. 161-171.

6) G. Tzabiras, D. Garofallidis, Y. Ventikos, "**On the numerical solution of the Reynolds equations around aerofoils by various orthogonal curvilinear coordinate systems**" 2nd National Congress on Mechanics, E.E.Th.E.M. (HSTAM, IUTAM member), Athens, 1989, pp. 702-711

7) G. Tzabiras, T. Loukakis, "**On the numerical solution of the turbulent flow-field past double ship hulls at low and high Re. Numbers**", Fifth Int. Conference on Numerical Ship Hydrodynamics, Hiroshima, 1989, pp. 395-407

8) G. Tzabiras, D. Garofallidis, "**Prediction of the resistance characteristics of an axisymmetric body with a propeller model**", 4th Int. Symposium on Practical Design of Ships, Varna 1989, pp. 14.1-14.8

9) G. D. Tzabiras, "**Numerical prediction of flow characteristics around a body of revolution with a ducted propeller**", 5th Int. Congress on Marine Technology, Athens '90, pp. 88-91

10) G. Tzabiras, T. Loukakis and D. Garofallidis, "**On the numerical solution of the**

total ship resistance problem under a predetermined free surface", 18th Symposium on Naval Hydrodynamics, ONR, Ann-Arbor, Michigan, 1990, pp. 1-17

11) G. Tzabiras, Y. Ventikos, "**Calculation of the wave pattern generated by a 2D submerged hydrofoil: A Navier-Stokes approach**", First Int. Conference on Mathematical and Numerical Aspects of Wave Propagation Phenomena, INRIA-SIAM, Strasbourg, 1991, pp. 406-416

12) Y. Ventikos, G. Tzabiras, M. Braza, "**On the Calculation of the Intrinsic Unsteadiness Past an Aerofoil**", Third National Conference on Mechanics, E.E.Th.E.M. (HSTAM, IUTAM member), Athens, Greece, 1992, pp 207-214

13) Y. Ventikos, G. Tzabiras, M. Braza, "**Identification of Aperiodicity of a Navier-Stokes Solution Around an Aerofoil with Dynamical Systems Theory Tools**", Fifth International Symposium on Refined Flow Modelling and Turbulence Measurements (book), Paris, France, 1993, pp 793-800

14) Y. Ventikos, G. Tzabiras, M. Braza, "**The effect of viscous dissipation on the organised structures in the wake past an aerofoil in transition to turbulence**", Ninth International Symposium on Turbulent Shear Flows, Kyoto, Japan, August 1993, pp 4.2.1-4.2.6

15) G. Tzabiras, M. Livanou, P. Chronopoulos and A. Tzavaras, "**A numerical method for predicting the transport of pollutants near coasts**", Proceedings of Hydrosoft-94 Conf., CMEM Pub. (book), 2, 1994, pp. 209-217

16) Y. Ventikos and G.Tzabiras, "**A numerical study of steady and unsteady cavitation phenomenon around hydrofoils**" Proceedings of International Symposium on Cavitation, Deauville, France, 1995, pp. 441-448

17) G.D.Tzabiras, "**A numerical study of laminar flow effects on the resistance of bodies of revolution**" Fourth National Conference on Mechanics, E.E.Th.E.M. (HSTAM, IUTAM member), Xanthi, Greece, 1995, pp. 927-937

18) G.D.Tzabiras, "**On the calculation of the free surface flow above an arbitrary 2D topography**", Fourth National Conference on Mechanics, E.E.Th.E.M. (HSTAM, IUTAM member), Xanthi, Greece, 1995, pp. 938-945

19) G.D. Tzabiras, "**Calculation of a ship's speed under specified engine characteristics**" First International Conference on Marine Technology ODRA-95, Szczecin, Poland, 1995, pp. 49-56

20) G. Tzabiras, G. Politis and T. Loukakis "**Calculation of propulsion characteristics of a tanker using different propeller models**" First International Conference on Marine Technology ODRA-95, Szczecin, Poland, 1995, pp. 65-72

- 21) M. Abdel-Maksud, H. Brandt, H. Nowacki and G. Tzabiras **“An experimental and numerical investigation of turbulent flows around a ship-like body with and without propeller”** First International Conference on Marine Technology ODRA-95, Szczecin, Poland, 1995, pp. 99-113
- 22) G.D. Tzabiras, A.C. Prifti, G.J. Grigoropoulos and T.A. Loukakis **“An advanced CFD method for predicting the propulsive performance of traditional fishing vessels”** CADAP-95 RINA Conference, Southampton, 1995, pp 17.1-17.16
- 23) T.A. Loukakis, A.C. Prifti, G.D. Tzabiras, G. I. Grigoropoulos **“The use of fins for improving the propulsive characteristics of a traditional fishing vessel”** MARIND-96 Conf., 1996, Varna, pp. I.85-I.102
- 24) G.D. Tzabiras **“Numerical study of the viscous flow past a ship’s model with asymmetric stern”** MARIND-96 Conf., 1996, Varna, pp. III.41-III.57
- 25) G.D. Tzabiras and A.C. Prifti **“Viscous flow computations past a traditional fishing vessel”** 2nd Nat. Conf. on Computational Mechanics 96, Chania, Crete, pp. 163-173
- 26) G.D. Tzabiras **“Numerical calculation of 2D free surface flows”** Proc. Computational Methods and Experimental Measurements VIII (CMEM-97), 1997, Rhodes, Greece, pp. 361-370
- 27) D.A. Garofallidis, G.D. Tzabiras and T.A. Loukakis **“Experimental determination of the wave surface around a ship model moving at constant speed in calm water”** Proc. Computational Methods and Experimental Measurements VIII (CMEM-97), 1997, Rhodes, Greece, pp. 523-532
- 28) G.D. Tzabiras, A.C. Prifti, G.J. Grigoropoulos and T.A. Loukakis **“Experimental and numerical investigation on hull forms of traditional fishing vessels”**, Proc. Int. Conf. On Power, Performance and Operability of Small Crafts, RINA, 1997, Southampton, pp. 9.1-9.14
- 29) G.D. Tzabiras **“On the calculation of self-propulsion characteristics of a Series-60, $c_B=0.6$ ship”** IMAM Conference, May 13-17, 2002, Crete, Greece.
- 30) V. Papakonstantinou and G.D. Tzabiras **“Wave resistance calculations of a series 60, $c_B=0.6$ hull using commercial codes”** IMAM Conference, May 13-17, 2002, Crete, Greece.
- 31) D. Spanos, A. Papanikolaou and G. Tzabiras **“On the effect of water on deck on ship motion”**, 21st OMAE Conference, June 23-28, 2002, Oslo, Norway
- 32) Y. Hoarau, M. Braza, P. Rodes, G. Tzabiras, C. Allain, E. Berton, D. Favier and C. Maresca **“Turbulence modelling of unsteady flows with a pronounced periodic character”** IUTAM Symposium on Unsteady Separated Flows, April 8-12, 2002,

Toulouse, France.

33) G. Tzabiras, E.Kiosse and C. Stratis “**Numerical and Experimental Investigation of 2D Sloshing in Rectangular Tanks**”, 8th International Marine Design Conference, May 5-8, 2003, Athens, Greece

34) G. Tzabiras and D. Antonakakis “**Numerical simulation of 2D flow around an oscillating foil**”, 7th National Congress on Mechanics, June 24-26, 2004, Chania, Crete, pp. 113-118, vol. 1.

35) G. Tzabiras and V. Papadopoulou “**Numerical simulation of accelerating and decelerating motion of a submerged body**”, OMAE-2005 Int. Conference, Chalkidiki, June 15-22, 2005, paper no 67-430, 8 pages.

36) G. Tzabiras and D. Garodallidus “**Computation of the resistance of s Series 60, $C_B=0.6$ model under a measured free-surface**”, IMAM-05 Int. Conference, Lisboa, Sep. 25-30,2005, pp 395-401.

37) G. Martinat, M. Braza, G. Harran, A. Sevrain, G.Tzabiras, Y. Hoarau and D. Favier “**Dynamic stall of a pitching and horizontally oscillating airfoil**”, IUTAM Symp. on Unsteady Separated Flows, Corfu, June 2007, Springer, pp. 395-403

38) S. Mavrakos, K. Spyrou, G. Tzabiras, J. Thanos, T. Mazarakos and S. Tzamtzis “**Towing of large ships through the canal of Korinthos**”, (in Greek) National Meeting of Marine Technology, HIMT, Piraeus, Nov. 2007, pp. 85-107

39) G. Tzabiras “**A method for predicting the influence of an additive bulb on ship resistance**” 8th International Conference on Hydrodynamics, Nantes 2008, pp. 53-60

40) G. Tzabiras and K. Kontogiannis “**Development of a method fort predicting the hydrodynamic behaviour of bulbs**”, (in Greek) National Meeting of Marine Technology, HIMT, Piraeus, Nov. 2008, pp. 51-65

41) G. Tzabiras, K. Kontogiannis and V. Papakonstantinou “**Numerical prediction of the resistance and self-propulsion characteristics of Passenger-Ferry ships**”, IMAM-09 Int. Conference, Istanbul, Oct. 12-15, 2009, pp. 291-298

42) G. Tzabiras, S. Polyzos and V. Papakonstantinou “**On a numerical method for generating harmonic waves in a towing tank**”, IMAM-09 Int. Conference, Istanbul, Oct. 12-15, 2009, pp. 625-632

43) G. Katsaounis, G. Tzabiras, S. Voutsinas and G. Bergeles “**Measurements of drag resistance on purse seine nets with application to their submergence problem**”, IMAM-09 Int. Conference, Istanbul, Oct. 12-15, 2009, pp. 649-654

44) D. Liarokapis, D. Sfakianaki, S. Perissakis and D. Tzabiras, “**Experimental**

investigations of the turbulence stimulator on a sailing yacht model", 10th Int. Conference on Marine Sciences and Technologies, Black Sea", 2010, Varna

(c) Chapters in Books

1) G.D. Tzabiras, "**Numerical evaluation of Reynolds scale effects on the resistance and propulsion characteristics of ships**", Advances in Fluid Mech. series, Special volume: Flows at large Reynolds numbers, ed. H. Schmitt, CMEM pub., 1997, pp. 251-290

2) M. Braza, G. Jin, G. Tzabiras, Y. Ventikos, "**Application of two-equation turbulence models for the prediction of the flow around aerofoils**", ECARP-II: Validation of CFD codes and assessment of turbulence models, Vieweg Verlag, 1997, pp.16.1-16.10.

3) G.Tzabiras and A. Prifti, "**Numerical simulation of the separated, turbulent flow past the stern of traditional fishing vessels**", Advances in Fluid Mech. series, Special volume: Calculation of Complex Turbulent Flows, ed. G. Tzabiras, CMEM pub., 2001, pp. 131-166

4) A. Boudhadji, S. Bourdet, M. Braza, Y. Hoarau, P. Rodes and G. Tzabiras, "**Turbulence modelling of unsteady flows with a pronounced periodic character**", Progress in Computational Flow-Structure Interaction, Springer NNFM vol. 81, W. Haase-Vitorio Selmin-Bengt Winzell (eds.), 2003, pp. 87-96.

(d) Other Publications

1) G. D. Tzabiras, "**Numerical and Experimental investigation of the Reynolds stress tensor at the stern of a double model**", 3rd Int. Congress of Marine Technology, Athens, June 1984

2) G. D. Tzabiras, M. Vafiadou, G. Nassos, "**A numerical method for the generation of 2D orthogonal curvilinear grids**", 1st Int. Conference on Numerical Grid Generation, Landshut, W. Germany, 1986

3) T. A. Loukakis, G. D. Tzabiras, "**Numerical prediction of the Reynolds number scale effects on viscous pressure resistance and nominal wake**", contribution to the Ship Resistance Committee of the I.T.T.C., 1984

4) T. A. Loukakis, G. D. Tzabiras, "**The use of numerical methods for the calculation of ship frictional and viscous pressure resistance**", contribution to the Ship Resistance Committee of the I.T.T.C., 1986

6) M. Braza, G. Desrayaud, G. Jin, G. Tzabiras, Y. Ventikos, "**Le Role de la Dissipation dans le Comportement aperiodique d' ecoulements autour de profils d' aile**", Forum Le Calcul Numerique Intensif pour la Science, Paris, France, 1993

- 7) G.D.Tzabiras “**Stern flow calculations for two double ship models**”, SSPA-CTH-IIHR Workshop on Ship Viscous Flow, Goteborg, 1990.
- 8) T.Loukakis, G. Tzabiras and D. Garofallidis “**CFD applications to ship hydrodynamics**” Contribution to the 21st ITTC Resistance and Flow Committees,1996
- 9) D. Garofallidis, G. Tzabiras, T. Loukakis and G. Grigoropoulos “**Uncertainty analysis in towing tank practice**” Contribution to the 21st ITTC Resistance and Flow Committees, 1996
- 10) G. Tzabiras “**Viscous flow calculations past a yacht hull**”, 1st NUTTS Symposium, Hamburg, 1998, pp 1-4
- 11) G. Tzabiras “**Self-propulsion simulation of a series-60, cb=0.6 hull**”, International Multi-Conference on Maritime Research and Technology, Crete, 2001, pp 1-4
- 12) Γ. Τζαμπίρας «**Ερευνητικές δραστηριότητες του ΕΝΘΥ σε θέματα υπολογιστικής υδροδυναμικής συνεκτικών ροών**», 2^η Ημερίδα στα φαινόμενα ροής ρευστών στην Ελλάδα, Πανεπιστήμιο Θεσσαλίας, 2000, σελ. 73-78
- 13) G.Tzabiras, V.Papakonstantinou, T.Loukakis “**Self-propulsion calculations past a fast ferry**” 3rd Num. Towing Tank Symposium, 9-13 Sept 2000, Tjarno Sweden, pp 1-4.
- 14) Papakonstantinou, G.Tzabiras, S.Voutsinas “**The role of transition on the performance characteristics of hydrofoils**” 5th Num. Towing Tank Symposium, Oct. 2002, Pornichet France, pp 1-4.
- 15) M.O.Hansen, J.A.Michelsen, M.Reck, N.N.Sorensen, J.Johansen, S.Voutsinas, V.Papakonstnatinou, G.Tzabiras, S.Conway, J.Ekaterinaris “**KNOWBLADE Task 1 “Improving power curve predictions”–first results**”, 2003 EWEC – 16-19 June 2003, Madrid Spain.