

*CURRICULUM VITAE*

*Kozyrakis Georgios*

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**Studies**

**2016: University of the Aegean: Doctorate in Costal Processes Simulation, School of the Environment, Department of Marine Sciences.**

**PhD thesis title:** Numerical Solution of Incompressible Flow Equations over irregular geometry, with Application to Coastal Hydrodynamics

**2004: University of Manchester, Department of Mathematics:**

**MSc in Theoretical & Applied Fluid Dynamics**

**MSc thesis title:** Numerical Calculation of Flow Over A Non-Spinning Disc-Wing.

**2002: Mechanical Engineer**

**Graduate of Technological Educational Institute of Crete (TEI of Crete), School of Mechanical Engineering, Energy Sector**

**Diploma Thesis Title:** Flow Simulation around a Flying Wing, using CFD Software ANSYS/FLOTRAN®.

**Language Skills**

**Greek:** Native language

**English:** Proficient user

**German:** Basic user

**Software Skills**

FORTRAN, VISUAL FORTRAN, C++, VISUAL C++, MATHEMATICA, MATLAB, PYTHON

AutoCAD Design Software.

Finite Element Analysis Software ANSYS.

Computational Fluid Dynamics (CFD) Software ANSYS/FLUENT, STAR-CD, CFX.

## **Special Skills**

Use of special software packages for the analysis and evaluation of engineering parts.  
Digitizing and evaluation of Topographic Maps.

## **Research Experience**

**During my collaboration with the Institute of Applied and Computational Mathematics (IACM-FORTH, Crete):**

- Development of new methods for quantifying and addressing the impact of climate change on the eastern coasts of the island of Crete in the frame of the **AKTAIA Project 2011 – 2015, (code: 09ΣYN-31-711) funded by the European Regional Development Fund and the Public Investment Fund through the Operational Programme "Competitiveness and Entrepreneurship" (EPAN-II).**
- The influence of climatic change on the coastal environment in relation with tourist planning, in the frame of the **“CLIMATOURISM” Project for PostDoc fellowships 2010, Ministry of Education, 2012 - 2015.**
- Program Modules “Resilience of the coastal environment to climate change with applications in economic activities” and “Methods of utilizing information from citizens (crowd sourcing) for addressing natural disasters and management applications for civil protection”, in the frame of the **PEFYKA project of the Action “Research Institutes Development Proposals – KRIPIS” of the National Strategic Reference Framework (NSRF) 2007 – 2013.**

**During my collaboration with the Department of Marine Sciences, University of the Aegean:**

- Numerical Simulation of Transient Free Surface Flow Round an Oil-Spill Tracking Surface Drifter (funded through the **operational programme “DIAVLOS”, in the frame of the 2.1 Meter of the Eastern Macedonia – Thrace Regional Operational Programme 2000-2006, of GSRT-Hellas.**

**During my employment in the Wind Energy Laboratory, TEI of Crete:**

- Development of computational models for the analysis of engineering parts of measurement devices and the qualitative and behavioral evaluation of complex systems **funded through the operational programme “COMPETITIVENESS” by the Greek Ministry of Development.**

## **Teaching Experience**

**Laboratory Collaborator of A.T.E.I. of Crete, School of Mechanical Engineering for the following courses:**

- “Mechanical Engineering Design I (CAD)” (Lab. course): 2008 – 2015.
- “Wind Power Systems” (Lab. course): 2008 - 2011
- “Fluid Mechanics” (Lab. course): 2011, 2012, 2013.
- “Wind Power Systems”, MSc in Energy Systems: 2014, 2015
- “Transport Phenomena”, MSc in Energy Systems: 2015
- WASP and Wind Farm Siting Seminars for the “Wind Power Systems” course: 2005, 2006, 2007.

### **Professional Experience**

**2/2006 till Today:** External Collaborator of the Institute of Applied and Computational Mathematics (FORTH, CRETE), Nikolaou Plastira 100, Vassilika Vouton, GR 700 13, P.O. Box 1385, Heraklion, Crete, Greece, Tel.: +30 2810 391802, Fax: +30 2810 391801, E-mail: [mariapap@iacm.forth.gr](mailto:mariapap@iacm.forth.gr)

**2/2006 till Today:** External Collaborator of the Department of Marine Sciences, School of the Environment, University of the Aegean, Marine Science Department Building, University Hill, GR 81100, Mytilene, Lesvos Island, Greece, Tel.: +30 22510 36800, e-mail: [secr-marine@aegean.gr](mailto:secr-marine@aegean.gr)

**5/2008 till Today:** As a freelance Mechanical Engineer, I have participated in the following projects: Heating and Air Conditioning Design for Buildings. Water Supply Network Design for Buildings. Fire Protection Design for Buildings. Pump Station Design for Water Supply Networks.

**3/2001 – 10/2001:** Training Period as Engineer, employed by A. Tsapalis, Mechanical and Electrical Engineering Consultants Company.

### **Additional Education**

#### **Seminars / Workshops Participation:**

#### **FORTH, CRETE (Institute of Applied and Computational Mathematics):**

- “6th Workshop on Numerical Methods for Evolution Equations”, FORTH, Heraklion – Crete, September 21-22 2012.
- “4th Workshop on Numerical Methods for Evolution Equations”, FORTH, Heraklion – Crete, September 26-27 2008.
- “Computational Fluid Dynamics”, Summer School, FORTH, Heraklion – Crete, July 9-14 2007

**Manchester Applied Mathematics and Numerical Analysis Seminars, University of Manchester and UMIST 2003-2004:**

- **“Fluid-structure interactions with mean flow”** N. Peake, DAMTP, Cambridge, 01/10/2003.
- **“Surface Tension Driven Flows in Fluid Wedges”**, John Billingham, School of Mathematical Sciences, University of Nottingham, 17/03/2004.
- **“Organised streaks without organised vortices in near-wall turbulence”**, Sergei Chernyshenko, School of Engineering Sciences, University of Southampton, 24/03/2004.
- **“Towards transition prediction for advanced supersonic laminar flow control concepts”**, Meelan Choudhari, NASA Langley Research Centre, 13/05/2004.
- **“Noise Computations and Modeling at NASA Langley Research Center”** Bart Singer, NASA Langley Research Centre, 13/05/2004.

**Other Activities / Projects**

**During my postgraduate studies:**

- Computational and analytical methods for solving partial differential equations.
- FORTRAN 95 code implementation for the numerical solution of the unsteady boundary layer flow equations over a cylinder.
- Flow field calculation and analysis of various benchmark projects using CFD software STAR CD and FLUENT.
- Aerodynamic coefficients and flow topology numerical calculations over a non-spinning disc-wing using FLUENT ver.6.1.18.

**In IACM-FORTH:**

- Flow simulations of water wave propagation for Greek coastal zones.
- Abdominal Aortic Aneurism wall stress analysis for real geometries.

**In the Department of Marine Sciences, University of the Aegean:**

- Morphodynamic simulations for Greek coastal zones.

**In the Wind Energy Laboratory, TEI of Crete:**

- Design of a small scale Flying Wing (3m span aircraft, without fuselage, to be used as a UAV).
- Blade Design for Wind Turbines.
- Calculation of the Aerodynamic Characteristics of various NACA Airfoils using ANSYS/FLOTRAN<sup>®</sup> CFD Software.
- Calculation of the Aerodynamic Characteristics of a Flying `Wing using ANSYS/FLOTRAN<sup>®</sup> CFD Software.
- Air Flow Simulation inside the Wing Tunnel which is located in the Wind Energy Lab using ANSYS/FLOTRAN<sup>®</sup> CFD Software.

- Design of a marine meteorological station for collecting coastal wind data in the Aegean Sea.
- Five years' experience on Wind Data & Time series Analysis, Wind Resource Assessment Analysis, Wind Farm Design & Siting, including actual terrain evaluation and site visits for potential wind farm projects.
- Two years' experience on Meteorological Stations installation and supervision according to the ISO/IEC 17025 Standards.

### **Publications**

1. Kozyrakis G., Sarantidis I., Tsampazis K., Christakis D., “**Wind Resource Assessment for the island of Crete**”, *Anemologia*, Issue 29, Jan. – Feb. 2005.
2. Kozyrakis G., Christakis D., Condaxakis C., Sarantidis I., Papadakis N., “**The influence of terrain’s slope on wind–turbine’s performance**”, Paper in EWEC 2006 - Design methodology (incl. external conditions) - European Wind Energy Conference and Exhibitions, Athens 2006, (2006 accepted).
3. D. Al. Katsaprakakis, N. Papadakis, G. Kozirakis, Y. Minadakis, D. Christakis, K. Kondaxakis, “**Electricity supply on the island of Dia based on renewable energy sources (R.E.S.)**”, *Applied Energy*, Volume 86, Issue 4, April 2009, Pages 516-527.
4. Zervakis V., Ktistakis M., Nikolaidis G., Moschopoulos K., Tragou E., Vousdoukas M., Leloudas V., Kozyrakis G. “**A New Drifter for Oil-Spill Tracking**”, 9th Panhellenic Symposium of Oceanography and Fisheries, Patras, May 2009, Proceedings, Volume I, Pages 535-539.
5. Efstratios Georgakarakos, Christos V. Ioannou, Yannis Papaharilaou, Theodoros Kostas, Georgios V. Kozyrakis, Asterios N. Katsamouris, “**Studying the Expansion of Small Abdominal Aortic Aneurysms: Is There a Role for Peak Wall Stress?**”, *International Angiology*, (2011) 30 (5): 462-466.
6. G. V. Kozyrakis, A. I. Delis, G. Alexandrakis, S. E. Poulos, N. A. Kampanis, “**Numerical modeling of sediment transport applied to coastal morphodynamics**”, Proceedings of the “Fifth Conference on Numerical Analysis (NumAn 2012) - Recent Approaches to Numerical Analysis: Theory, Methods and Applications”, Ioannina, Greece, 5 - 8 September, 2012.
7. G. V. Kozyrakis, A. I. Delis, N. A. Kampanis, “**A finite difference solver for incompressible Navier-Stokes flows in complex domains**”, Special Issue: NUMAN 2012, *Applied Numerical Mathematics*, (under review).
8. N. A. Kampanis, A. I. Delis, G. Kozyrakis, D. C. Antonopoulou, “**A finite element discretization of the standard parabolic equation in generalized boundary fitting coordinates**”, *Applied Numerical Mathematics* (2013) 67 152–166.

9. V.G. Mandikas, E.N. Mathioudakis, G.V. Kozyrakis, J.A. Ekaterinaris, N.A. Kampanis, “**A multigrid accelerated high-order pressure correction compact scheme for incompressible Navier-Stokes solvers**”, in: Proceedings of the 6th International Conference on Numerical Analysis (NumAn2014), 2014, pp. 198-203.
10. K. Alpantaki, C. Koutserimpas, A. Loutsidi, M. Liontiris, G. Kozyrakis, A. Kouroubali, N. Kampanis, G. Kontakis, “**Gender and age differences for fall related fractures among elderly**”, 15th International Falls and posture stability meeting , Manchester, September 2014.
11. E. Spanakis, G.V. Kozyrakis, K. Spanoudaki, G. Alexandrakis, K. Marias, N.A. Kampanis, “**Development of a novel information system utilizing crowd-sourcing methods for addressing and managing natural disasters**”, in: SafeRhodes 2014: National Conference "The use of new technologies in the prevention and management of natural disasters - Role of Civil Protection", Rhodes, Greece, 2014.
12. Stelios Petrakis, George Alexandrakis, George Kozyrakis, Eleni Hatziyanni, Nikolaos Kampanis, “**Integrated protecting plan for beach erosion. A case study in Plaka beach, E. Crete, Greece**”, Geophysical Research Abstracts Vol. 17, EGU2015-10102-1, 2015, EGU General Assembly 2015.
13. Stylianos D Tsivgoulis, George N Tzagarakis, Kalliopi Alpantaki, Efstathios Chronopoulos, Pavlos G Katonis, Georgios V. Kozyrakis, Nikolaos A Kampanis, “**Influence of Body Features in Soccer Athlete’s Gait Variability**”, International Journal of Science and Engineering Technology, Vol. 1, No. 1; October 2015.
14. G.V. Kozyrakis, A.I. Delis, G. Alexandrakis, N.A. Kampanis, “**Numerical modeling of sediment transport applied to coastal morphodynamics**”, Applied Numerical Mathematics, 104 (2016) 30-46.