

Curriculum Vitae

ATHANASSIOS A. DIMAS

1. GENERAL

Department of Civil Engineering
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2. EDUCATION

- Feb. 1988 – Jun. 1991 **Massachusetts Institute of Technology (MIT).**
Ph.D. in Ocean Engineering.
Thesis: Nonlinear Interaction of Shear Flows with a Free Surface.
- Sep. 1985 – Feb. 1988 **Massachusetts Institute of Technology (MIT).**
M.Sc. in Ocean Engineering:
Coastal and Offshore Structures Design, Marine Hydrodynamics.
Thesis: Interaction Between a Two-Dimensional Wake and the Free Surface at Low Froude Numbers.
- Sep. 1985 – Feb. 1988 **Massachusetts Institute of Technology (MIT).**
M.Sc. in Mechanical Engineering:
Computational Fluid Dynamics, Numerical Analysis Methods,
Multivariable Control Systems.
Thesis: Interaction Between a Two-Dimensional Wake and the Free Surface at Low Froude Numbers.
- Sep. 1980 – Jun. 1985 **National Technical University of Athens (NTUA).**
Diploma in Naval Architecture and Marine Engineering.
Diploma Grade: 8.98/10.
Thesis: Numerical Study of Turbulent Flow Field Around a Hydrofoil.

3. EXPERIENCE

- Jul. 2013 – present Professor.
Department of Civil Engineering, University of Patras.
- Sep. 2020- present Director
Laboratory of Hydraulic Engineering,
Department of Civil Engineering, University of Patras.
- Nov. 2015 – Aug. 2020 Chairman.
Department of Civil Engineering, University of Patras.
- Aug. 2008 – Jul. 2013 Associate Professor.
Department of Civil Engineering, University of Patras.
- May 2002 – Aug. 2008 Assistant Professor.
Department of Civil Engineering, University of Patras.
- Sep. 2006 – Sep. 2020 Tutor, Hellenic Open University
Postgraduate Course: Environmental Infrastructure Design.
- Mar. 1994 – May 2002 Assistant Professor (adjunct and tenure-track).
Department of Mechanical Engineering, University of Maryland.
- Sep. 1997 – May 2002 Senior Scientist.
Krispin Technologies, Inc. and VorCat, Inc.: Computational Fluid Dynamics software development.

- Jul. 1991 – Feb. 1994 Postdoctoral Research Associate.
Benjamin Levich Institute, The City College of The City University of New York.
- Sep. 1985 – Jun. 1991 Research and Teaching Assistant.
Department of Ocean Engineering, Massachusetts Institute of Technology.

4. AWARDS

- 1990 – 1991 Award and Scholarship by the Offshore Mechanics and Polar Engineering Council.
- 1989 First Prize for Concrete Canoe Design by the American Society of Civil Engineers, New England Section.
- 1985 – 1991 Graduate Studies Scholarship by the Department of Ocean Engineering, MIT.
- 1982, 1983, 1984, 1985 Scholarship by the Hellenic State Scholarship Foundation during the 2nd, 3rd, 4th, and 5th academic years at NTUA.
- 1983, 1984, 1985 Scholarship by the Technical Chamber of Greece during the 3rd, 4th, and 5th academic years at NTUA.

5. PUBLICATIONS

A. Books

1. Karambas, Th., Dimas, A.A., and Loukogeorgaki, E., 2020. *Coastal Engineering and Harbour Works*. Disigma Publications, Thessaloniki, Greece. (in Greek)

B. Patents

1. Dimas, A.A., Lottati, I., Bernard, P.S., Collins, J.P. and Geiger, J.C., 2003. *Apparatus for and Method of Simulating Turbulence*. United States Patent No. 6,512,999.

C. Articles in Refereed Journals

1. Karvelis, A.C., Dimas, A.A., Gantes, C.J., 2024. Unsteady numerical simulation of two-dimensional airflow over a square cross-section at high Reynolds numbers as a reduced model of wind actions on buildings. *Buildings* 14, 561. <https://doi.org/10.3390/buildings14030561>
2. Fakiris, E., Giannakopoulos, V., Leftheriotis, G., Dimas, A.A., Papatheodorou, G., 2023. Predictive mapping of Mediterranean seagrasses - Exploring the influence of seafloor light and wave energy on their fine-scale spatial variability. *Remote Sensing* 2943. <https://doi.org/10.3390/rs15112943>
3. Depountis, N., Apostolopoulos, D., Boumpoulis, V., Christodoulou, D., Dimas, A., Fakiris, E., Leftheriotis, G., Menegatos, A., Nikolakopoulos, K., Papatheodorou, G., Sabatakakis, N., 2023. Coastal erosion identification and monitoring in the Patras Gulf (Greece) using multi-discipline approaches. *Journal of Marine Science and Engineering*, 11, 654. doi.org/10.3390/jmse11030654
4. Chalmoukis, I.A., Leftheriotis, G.A., and Dimas, A.A., 2023. Large-eddy simulation of wave attenuation and breaking on a beach with coastal vegetation modelled as porous medium, *Journal of Marine Science and Engineering*, 11, 519. doi.org/10.3390/jmse11030519
5. Bourantas, G.C., Zwick, B.A., Lavier, T.P., Loukopoulos, V.C., Dimas, A.A. Wittek, A., and Miller, K., 2023. An immersed boundary vector potential-vorticity meshless solver of the incompressible Navier-Stokes equations. *International Journal for Numerical Methods in Fluids*, 95, 143-175. doi.org/10.1002/fld.5146
6. Leftheriotis, G.A., and Dimas, A.A., 2022. Morphodynamics of vortex ripple creation under constant and changing oscillatory flow conditions. *Coastal Engineering*, 177. doi.org/10.1016/j.coastaleng.2022.104198

7. Leftheriotis, G.A., Chalmoukis, I.A., Oyarzun, G., and Dimas, A.A., 2021. A hybrid parallel numerical model for wave-induced free-surface flow. *Fluids*, 6, 350. doi.org/10.3390/fluids6100350
8. Dimas, A.A., and Chalmoukis, I.A., 2020. An adaptation of the immersed boundary method for turbulent flows over three-dimensional coastal/fluvial beds. *Applied Mathematical Modelling*, 88, 905-915. doi.org/10.1016/j.apm.2020.07.007
9. Chalmoukis, I.A., Dimas, A.A., and Grigoriadis, D.G.E., 2020. Large-eddy simulation of turbulent oscillatory flow over three-dimensional transient vortex ripple geometries in quasi-equilibrium. *Journal of Geophysical Research - Earth Surface*, 125(8). doi.org/10.1029/2019JF005451
10. Frantzis, C., Grigoriadis, D.G.E., and Dimas, A.A., 2020. Numerical study of solitary waves past slotted breakwaters with a single row of vertical piles: Wave processes and flow behavior. *Ocean Engineering*, 211, 107667.
11. Oyarzun, G., Chalmoukis, I.A., Leftheriotis, G.A., and Dimas, A.A., 2020. A GPU-based algorithm for efficient LES of high Reynolds number flows in heterogeneous CPU/GPU supercomputers. *Applied Mathematical Modelling*, 85, 141-156.
12. Koutrouveli, Th.I., and Dimas, A.A., 2020. Wave and Hydrodynamic Processes in the Vicinity of a Rubble-Mound, Permeable, Zero-Freeboard Breakwater. *Journal of Marine Science and Engineering*, accepted.
13. Frantzis, C., Grigoriadis, D.G.E., and Dimas, A.A., 2020. An efficient Navier-Stokes based numerical wave tank using fast Poisson solvers and the immersed boundary method. *Ocean Engineering*, 196, 106832.
14. Galani, K.A., Dimou, I.D., and Dimas, A.A., 2019. Wave height and setup in the sheltered area of a segmented, detached, rubble-mound, zero-freeboard breakwater on a steep beach. *Ocean Engineering*, 186, 106124.
15. Dimas, A.A., and Koutrouveli, Th.I., 2019. Wave-height dissipation and undertow of spilling breakers over beach of varying slope. *Journal of Waterway, Port, Coastal, and Ocean Engineering (ASCE)*, 145(5), 04019016.
16. Dimas, A.A., and Leftheriotis, G.A., 2019. Mobility parameter and sand grain size effect on sediment transport over vortex ripples in the orbital regime. *Journal of Geophysical Research – Earth Surface*, 124(1), 2-20.
17. Koutrouveli, Th.I., Dimas, A.A., Fourniotis, N.Th., and Demetracopoulos, A.C., 2019. Groyne spacing role on the effective control of wall shear stress in open-channel flow. *Journal of Hydraulic Research*, 57(2), 167-182.
18. Fourniotis, N.Th., Vouros, A.P., and Dimas, A.A., 2019. Pier shape effect on backwater rise and drag force in open-channel flow. *International Review of Civil Engineering (IRECE)*, 10(3), 170-175.
19. Metallinos, A.S., Klonaris, G.Th., Memos, C.D., and Dimas, A.A., 2019. Hydrodynamic conditions in a submerged porous breakwater. *Ocean Engineering*, 172, 712-725.
20. Monsorno, D., Dimas, A.A., and Papalexandris, M.V., 2018. Time-accurate calculation of two-phase granular flows exhibiting compaction, dilatancy and nonlinear rheology. *Journal of Computational Physics* 372, 799-822.
21. Kolokythas, G.A., Grigoriadis, D.G.E., and Dimas A.A., 2018. Dynamic friction angle/ coefficient in formulas of bed load transport induced by waves over ripples. *Journal of Coastal Research*, 34(4), 996-1008.
22. Dimas, A.A., and Galani, K.A., 2016. Turbulent flow induced by regular and irregular waves above a steep rock-armored slope. *Journal of Waterway, Port, Coastal, and Ocean Engineering (ASCE)*, 142, 04016004.
23. Kolokythas, G.A., Leftheriotis, G.A., and Dimas, A.A., 2014. Numerical simulation of coastal flow and sediment transport over rippled beds. *ERCOFTAC Bulletin* 100, 1-9. Editor Vincenzo Armenio.
24. Grigoriadis, D.G.E., Balaras, E., and Dimas, A.A., 2013. Coherent structures in oscillating turbulent boundary layers over a fixed rippled bed. *Flow, Turbulence and Combustion* 91(3), 565-585.
25. Dimas A.A., and Vouros, A., 2012. Effect of cross-flow velocity at forebay on swirl in pump suction pipe: Hydraulic model of seawater intake at Aliveri power plant in Greece. *Journal of*

- Hydraulic Engineering (ASCE) 138, 812-816.
26. Grigoriadis, D.G.E., Dimas, A.A., and Balaras, E., 2012. Large-eddy simulation of wave turbulent boundary layer over rippled bed. *Coastal Engineering* 60, 174-189.
 27. Dimakopoulos, A.S., and Dimas, A.A., 2011. Large-wave simulation of three-dimensional, cross-shore and oblique, spilling breaking on constant slope beach. *Coastal Engineering* 58, 790-801.
 28. Dimas, A.A., and Kolokythas, G.A., 2011. Flow dynamics and forces on ripples induced by viscous wave propagation over rippled bed. *Journal of Waterway, Port, Coastal, and Ocean Engineering (ASCE)* 137, 64-74.
 29. Dimas, A.A., and Dimakopoulos, A.S., 2009. A Surface-Roller Model for the Numerical Simulation of Spilling Wave Breaking Over Constant Slope Beach. *Journal of Waterway, Port, Coastal, and Ocean Engineering (ASCE)* 135, 235-244.
 30. Grigoriadis, D.G.E., Balaras, E., and Dimas, A.A., 2009. Large-Eddy Simulations of Unidirectional Water Flow Over Dunes. *Journal of Geophysical Research – Earth Surface* 114, F02022.
 31. Dimas, A.A., Fourniotis, N.T., Vouros, A., and Demetracopoulos, A.C., 2008. Effect of Bed Dunes on Spatial Development of Open-Channel Flow. *Journal of Hydraulic Research (IAHR)* 46, 802-813.
 32. Dimas, A.A., 2008. Discussion on the Numerical Simulation of Wave-Induced Laminar Boundary Layers. *Coastal Engineering* 55, 1243-1244.
 33. Drosos, G.C., Dimas, A.A., and Karabalis, D.L., 2008. Discrete Models for Seismic Analysis of Liquid Storage Tanks of Arbitrary Shape and Fill Height. *Journal of Pressure Vessel Technology* 130(041801), 1-12.
 34. Dimas, A.A., 2007. Large-Wave Simulation of Microscale Breaking Waves Induced by a Free-Surface Drift Layer. *Wave Motion* 44, 355-370.
 35. Dimas, A.A., Mowili, B.M., and Piomelli, U., 2003. Large-Eddy Simulation of Subcritical Transition in an Attachment-Line Boundary Layer. *Computers and Mathematics with Applications* 46, 571-589.
 36. Dimas, A.A., and Fialkowski, L.T., 2000. Large-Wave Simulation (LWS) of Free-Surface Flows Developing Weak Spilling Breaking Waves. *Journal of Computational Physics* 159, 172-196.
 37. Miller, M.P., Nennstiel, T., Duncan, J.H., Dimas, A.A., and Prostler, S., 1999. Incipient Breaking of Steady Waves in the Presence of Surface Wakes. *Journal of Fluid Mechanics* 383, 285-305.
 38. Dimas, A.A., and Kiger, K.T., 1998. Linear Instability of a Particle-Laden Mixing Layer with a Dynamic Dispersed Phase. *Physics of Fluids* 10, 2539-2557.
 39. Dimas, A.A., 1998. Free-Surface Waves Generation by a Fully-Submerged Wake. *Wave Motion* 27, 43-54.
 40. Duncan, J.H., and Dimas, A.A., 1996. Surface Ripples due to Steady Breaking Waves. *Journal of Fluid Mechanics* 329, 309-339.
 41. Dimas, A.A., and Triantafyllou, G.S., 1995. Baroclinic-Barotropic Instabilities of the Gulf Stream Extension. *Journal of Physical Oceanography* 25, 825-834.
 42. Dimas, A.A., and Triantafyllou, G.S., 1994. Nonlinear Interaction of Shear Flow with a Free Surface. *Journal of Fluid Mechanics* 260, 211-246.
 43. Triantafyllou, G.S., and Dimas, A.A., 1989. Interaction of Two-Dimensional Separated Flows with a Free Surface at Low Froude Numbers. *Physics of Fluids A* 1, 1813-1821.
 44. Tzabiras, G., Dimas, A.A., and Loukakis, T., 1986. A Numerical Method for the Calculation of Incompressible, Steady, Separated Flows around Aerofoils. *International Journal for Numerical Methods in Fluids* 6, 789-809.

D. Articles in Referred Books

1. Dimas, A.A., and Kolokythas, G.A., 2010. Reynolds Number Effect on Spatial Development of Viscous Flow Induced by Wave Propagation Over Bed Ripples. In *Advances in Environmental Fluid Mechanics*, Chap. 5, 127-143. Editors: Dragutin T. Mihailovic and Carlo Gualtieri. World Scientific, Singapore.

2. Bernard, P.S., Dimas, A.A., and Lottati, I., 2000. Vortex method analysis of turbulent flows. In *Vortex Methods: Selected Papers of the First International Conference on Vortex Methods*, 79-91. World Scientific. Editors: Kamemoto, K. and Tsutahara, M.
3. Miller, M.P., Nennstiel, T., Fialkowski, L.T., Prostler, S., Duncan, J.H., and Dimas, A.A., 2000. Incipient Breaking of Steady Waves. In *Naval Ship Hydrodynamics*, 818-834. The National Academy of Sciences.
4. Bernard, P.S., Dimas, A.A., and Collins, J.P., 1999. Turbulent Flow Modeling Using a Fast Parallel, Vortex Tube and Sheet Method. In *Third International Workshop on Vortex Flows and Related Numerical Methods, European Series in Applied and Industrial Mathematics (ESAIM)*, Vol. 7, 46-55. Editors: Giovannini, A., Cottet, G. H., Gagnon, Y., Ghoniem, A. and Meiburg, E.

D. Articles in Refereed Conference Proceedings

1. Chalmoukis, I.A., Leftheriotis, G.A., and Dimas, A.A., 2022. Numerical simulations of wave breaking over coastal vegetation as a beach protection solution. 7th IAHR Europe Congress, Athens, Greece.
2. Fakiris, E., Leftheriotis, G.A., Dimas, A.A., and Papatheodorou, G. 2022. Seagrass fine-scale distribution linked to wave energy and hydrodynamics in a shallow Mediterranean marine protected area. Proc. VIII International Symposium on Marine Sciences 2022 (ISMS), Las Palmas de Gran Canarias, Spain.
3. Vavouraki, A., Galani, K.A., Lyras, V., and Dimas, A.A., 2021. Experimental study of the dynamic response of a spar-buoy offshore wind turbine under wave attack. Proc. 31st International Offshore and Polar Engineering Conference (ISOPE 2021), Online.
4. Georgountzou, V.E., and Dimas, A.A., 2020. Numerical study of a perched beach system for coastal protection of the Ampelas area in Paros, Greece. Proc. Protection and Restoration of the Environment XV, 289-299, Patras, Greece.
5. Leftheriotis, G.A., and Dimas, A.A., 2018. Large-Eddy Simulation of Oscillatory Flow, Sediment Transport and Morphodynamics over Ripples. Proc. 36th International Conference on Coastal Engineering (ICCE 2018), Baltimore, USA.
6. *Dimas, A.A., and Oyarzun, G., 2018. Turbulent Oscillatory Flow Over Ripples at High Reynolds Numbers for Peta-Scale Simulations. Proc. 36th International Conference on Coastal Engineering (ICCE 2018), Baltimore, USA.
7. Galani, K.A. and Dimas, A.A., 2018. Experimental Study of the Flow Induced by Waves in the Vicinity of a Detached Low-Crested (Zero Freeboard) Breakwater. Proc. 36th International Conference on Coastal Engineering (ICCE 2018), Baltimore, USA.
8. Koutrouveli, Th.I. and Dimas, A.A., 2018. Wave Transmission Over Low-Crested Breakwaters. Proc. 36th International Conference on Coastal Engineering (ICCE 2018), Baltimore, USA.
9. Leftheriotis, G.A. and Dimas, A.A., 2017. Large Eddy Simulation of Oscillatory Flow, Sediment Transport and Morphodynamics Over Ripples. Proc. 27th International Offshore and Polar Engineering Conference (ISOPE 2017), San Francisco, USA.
10. Chalmoukis, I.A. and Dimas, A.A., 2017. Large-Eddy Simulation of Turbulent Characteristics of Oscillatory Flow Over 3-D Vortex Ripples. Proc. 27th International Offshore and Polar Engineering Conference (ISOPE 2017), San Francisco, USA.
11. *Galani, K.A. and Dimas, A.A., 2017. Experimental Study of the Influence of Wave Breaking Over a Sloping Beach on the Flow Upstream of the Surf Zone. Proc. 27th International Offshore and Polar Engineering Conference (ISOPE 2017), San Francisco, USA.
12. Koutrouveli, Th.I. and Dimas, A.A., 2017. Numerical Simulation of Wave Overtopping Over Low-Crested Breakwaters Using the Immersed Boundary Method. Proc. 27th International Offshore and Polar Engineering Conference (ISOPE 2017), San Francisco, USA.
13. Leftheriotis, G.A. and Dimas, A.A., 2016. Large Eddy Simulation of Oscillatory Flow and Morphodynamics over Ripples. Proc. 35th International Conference on Coastal Engineering (ICCE 2016), Antalya, Turkey.
14. Kolokythas, G.A. and Dimas, A.A., 2016. Oblique Wave Breaking and Suspended Sediment Transport Over a Constant Slope Bed. Proc. 26th International Offshore and Polar Engineering Conference (ISOPE 2016), Vol. 3, 1206-1212, Rhodes, Greece.

15. Leftheriotis, G.A. and Dimas, A.A., 2016. Large Eddy Simulation of Oscillatory Flow, Sediment Transport and Morphology Evolution over Ripples based on the Immersed Boundary Method. Proc. 26th International Offshore and Polar Engineering Conference (ISOPE 2016), Vol. 3, 1198-1205, Rhodes, Greece.
16. Chalmoukis, I.A. and Dimas, A.A., 2016. Numerical Simulation of Oscillatory Flow Over 3-D Vortex Ripples Using the Immersed Boundary Method. Proc. 26th International Offshore and Polar Engineering Conference (ISOPE 2016), Vol. 3, 1190-1197, Rhodes, Greece.
17. Mamalakis, A., Kaleris, V. and Dimas, A.A., 2016. Estimating the Timescale of the Seawater Retreat in Coastal Aquifers: Dimensional Analysis and Numerical Investigations. EGU General Assembly 2016, Vienna, Austria.
18. Leftheriotis, G.A. and Dimas, A.A., 2015. Coupled Simulation of Flow, Sediment Transport and Morphology Evolution over Ripples based on the Immersed Boundary Method. Proc. 36th IAHR World Congress, Hague, Netherland.
19. Galani, K.A. and Dimas, A.A., 2015. Experimental Study of Flow under 3-D Breaking Waves over a Smooth Beach. Proc. 36th IAHR World Congress, Hague, Netherland.
20. Koutrouveli, Th.I. and Dimas, A.A., 2015. Large-Eddy and Large-Wave Simulation of Wave Breaking over a Constant Slope Beach Using the Immersed Boundary Method. Proc. 36th IAHR World Congress, Hague, Netherland.
21. Sfouni-Grigoriadou, M.Th, Kolokythas, G.A. and Dimas, A.A., 2015. Numerical Simulation of Suspended Sediment Transport Induced by Near-Shore Wave Breaking. Proc. 36th IAHR World Congress, Hague, Netherland.
22. *Dimas, A.A., Dimakopoulos, A.S. and Kolokythas, G.A., 2015. Large-wave simulation of breaking waves over a beach. Proc. ERCOFTAC DLES 10, Limassol, Cyprus.
23. Leftheriotis, G.A. and Dimas, A.A., 2014. Coupled Numerical Simulation of Flow, Sediment Transport and Morphology Evolution of Dunes based on the Immersed Boundary Method. Proc. River Flow 2014, Lausanne, Switzerland.
24. Koutrouveli, Th.I., Fourniotis, N.Th., Demetracopoulos, A.C. and Dimas, A.A., 2014. Numerical Simulation of Turbulent Flow in Open Channel with Groynes. Proc. River Flow 2014, Lausanne, Switzerland.
25. Kolokythas, G.A. and Dimas, A.A., 2014. Numerical Simulation of Oblique Wave Breaking and Wave-Induced Currents in the Surf Zone. Proc. 33rd International Conference on Offshore Mechanics and Arctic Engineering OMAE2014-24125, 1-9, San Francisco, USA.
26. Galani, K.A., Dimou, G.D. and Dimas, A.A., 2014. Experimental Study of Turbulent Flow Induced by Regular and Irregular Waves Above a Rock-Armored Slope. Proc. 33rd International Conference on Offshore Mechanics and Arctic Engineering OMAE2014-23993, 1-10, San Francisco, USA.
27. *Fonias, E.N. and Dimas, A.A., 2014. Immersed Boundary Method for Simulation of Oscillatory Flow Past a Submerged Cylinder Near Above a Horizontal Bed. Proc. 33rd International Conference on Offshore Mechanics and Arctic Engineering OMAE2014-23986, 1-10, San Francisco, USA.
28. Koutrouveli, Th.I. and Dimas, A.A., 2014. Numerical simulation of wave propagation over submerged composite breakwaters using the immersed boundary method. Proc. 33rd International Conference on Offshore Mechanics and Arctic Engineering OMAE2014-24055, 1-9, San Francisco, USA.
29. Leftheriotis, G.A. and Dimas, A.A., 2014. Coupled Simulation of Oscillatory Flow, Sediment Transport and Morphology Evolution of Ripples based on the Immersed Boundary Method. Proc. 33rd International Conference on Offshore Mechanics and Arctic Engineering OMAE2014-24006, 1-8, San Francisco, USA.
30. Galani, K.A., Dimou, G.D., Karageorgopoulos, E.G. and Dimas, A.A., 2013. PIV Measurements of Turbulent Flow Induced by Waves Above a Rock-Armored Slope. Proc. Coastal Dynamics 2013, Arcachon, France.
31. Kolokythas, G.A. and Dimas, A.A., 2013. Three-Dimensional Modelling of Wave-Induced Currents in the Surf Zone. Proc. Coastal Dynamics 2013, Arcachon, France.
32. *Dimas, A.A., 2012. Linear Instability of Suspended Sediment Two-Phase Flow During Upwelling/Downwelling. Proc. 9th International Symposium on Ecohydraulics (ISE 2012),

- Vienna, Austria.
33. Kolokythas, G.A., Dimakopoulos, A.S. and Dimas, A.A., 2012. Large-Wave Simulation of Turbulent Flow Induced by Wave Propagation and Breaking Over Constant Slope Bed. Proc. 33rd International Conference on Coastal Engineering (ICCE 2012), No. 352, Santander, Spain.
 34. Grigoriadis, D.G.E., Dimas, A.A. and Balaras, E., 2012. LES of Oscillating Turbulent Boundary Layer Over Rippled Bed. Proc. 9th International ERCOFTAC Symposium on Engineering Turbulence Modelling and Measurements (ETMM9), No. 132, Thessaloniki, Greece.
 35. *Kolokythas, G.A. and Dimas, A.A., 2012. Numerical Simulation of Viscous Flow Under Breaking Waves Over Constant Slope. Proc. 22nd International Offshore and Polar Engineering Conference (ISOPE 2012), Vol. 3, 1213-1217, Rhodes, Greece.
 36. Kolokythas, G.A. and Dimas, A.A., 2011. Rippled Bed Morphology Equilibrium Under the Action of Waves. Proc. Coastal Sediments 11, 1109-1120, Miami, Florida.
 37. Dimakopoulos, A.S. and Dimas, A.A., 2010. Large-Wave Simulation of Three-Dimensional Wave Breaking Over Constant Slope Beach. Proc. 6th International Symposium on Environmental Hydraulics, 427-432, Athens, Greece.
 38. Kolokythas, G.A. and Dimas, A.A., 2010. Bed Equilibrium During Water Wave Propagation Over Ripples. Proc. 6th International Symposium on Environmental Hydraulics, 433-438, Athens, Greece.
 39. Galani, K.A., Fourniotis, N.Th., Demetracopoulos, A.C. and Dimas, A.A., 2010. Three-Dimensional Turbulent Flow Over Bed Dunes in Open Channel of Finite Width. Proc. 6th International Symposium on Environmental Hydraulics, 985-990, Athens, Greece.
 40. Kolokythas, G.A. and Dimas, A.A., 2009. Numerical Simulation of Viscous Free-Surface Flow Induced by Wave Propagation Over Rippled Bed. Proc. International Conference on Coastal Engineering (ICCE) 2008, 425-436, Hamburg, Germany.
 41. Dimakopoulos, A.S. and Dimas, A.A., 2008. Large-Wave Simulation of Spilling Breakers Over Immersed Longshore Bar. Proc. 16th Congress of Asia and Pacific Division of International Association of Hydraulic Engineering and Research and 3rd IAHR International Symposium on Hydraulic Structures A4a124, 1-6, Nanjing, China.
 42. Fourniotis, N.T., Toleris, N.E., Dimas, A.A. and Demetracopoulos, A.C., 2008. Numerical Computation of Turbulence in Flow Over Sand Dunes. Proc. 16th Congress of Asia and Pacific Division of International Association of Hydraulic Engineering and Research and 3rd IAHR International Symposium on Hydraulic Structures A3a125, 1-6, Nanjing, China.
 43. *Dimas, A.A., 2008. Numerical Simulation of Nonlinear Water Wave Propagation Over Rippled Bed. Proc. iEMSs 2008 International Congress on Environmental Modelling and Software, Vol. 1, 162-169, Barcelona, Spain.
 44. Dimakopoulos, A.S. and Dimas, A.A., 2008. Large-Wave Simulation of Spilling Breakers Over Constant-Slope Bottom. Proc. 27th International Conference on Offshore Mechanics and Arctic Engineering OMAE2008-57164, 1-8, Estoril, Portugal.
 45. Kolokythas, G.A. and Dimas, A.A., 2007. Numerical Simulation of Nonlinear Water Wave Propagation Over Rippled Bed. Proc. 5th Joint ASME/JSME Fluids Engineering Conference FEDSM2007-37480, 1-6, San Diego, California.
 46. Dimakopoulos, A.S. and Dimas, A.A., 2007. Numerical Simulation of Two-Dimensional Free-Surface Flow and Wave Transformation Over Constant-Slope Bottom Topography. Proc. 5th Joint ASME/JSME Fluids Engineering Conference FEDSM2007-37520, 1-6, San Diego, California.
 47. *Dimas, A.A., Balaras, E. and Grigoriadis, D.G.E., 2007. Turbulence Statistics and Structures by Large-Eddy Simulation of Open-Channel Sub-Critical Flow Over Bed Dune. Proc. 2007 IAHR Congress, No. 622, 1-10, Venice, Italy.
 48. Grigoriadis, D.G.E., Dimas, A.A. and Balaras, E., 2007. Large-Eddy Simulation of Turbulent Boundary Layer by Steady or Oscillatory Current Flow Over Flat, Wavy, or Rippled Bottom. Proc. 2007 IAHR Congress, No. 625, 1-10, Venice, Italy.
 49. Fourniotis, N.T., Dimas, A.A. and Demetracopoulos, A.C., 2006. Spatial Development of Turbulent Open Channel Flow Over Bottom with Multiple Dunes. Proc. River Flow 2006 1, Ferreira, Alves, Leal & Cardoso (Eds), ISBN 0-415-40815-6, 1023-1031, Lisbon, Portugal.
 50. Dimakopoulos, A.S. and Dimas, A.A., 2006. Numerical Simulation of Nonlinear Wave Propagation and Breaking Over Constant-Slope Bottom. Proc. 25th International Conference on

- Offshore Mechanics and Arctic Engineering OMAE2006-92163, 1-10, Hamburg, Germany.
51. Dimakopoulos, A.S. and Dimas, A.A., 2005. Numerical Simulation of Two-Dimensional Free-Surface Flow and Wave Transformation Over Constant-Slope Bottom Topography. Proc. XXXI IAHR Congress, 3798-3807, Seoul, South Korea.
 52. *Dimas, A.A., 2005. Large-Wave Simulation of Surface Tension Effect on Weak Spilling Breakers. Proc. 24th International Conference on Offshore Mechanics and Arctic Engineering OMAE2005-67278, 1-8, Halkidiki, Greece.
 53. *Dimas, A.A., Bernard, P.S., Collins, J.P. and Potts, M., 2003. Vortex Method Simulation of Turbulent Boundary Layers. Proc. XXX IAHR Congress D, 647-654, Thessaloniki, Greece.
 54. Bernard, P.S. and Dimas, A.A., 2001. Vortex Method Modeling of Complex, Turbulent, Engineering Flows. Proc. The Second International Conference on Vortex Methods. 41-54, Istanbul, Turkey.
 55. Bernard, P.S., Dimas, A.A., Collins, J.P. and Lottati, I., 2000. Large Scale Vortex Method Simulation of Turbulent Flow. Proc. High Performance Computing Symposium, Editor: A. Tentner, SCS, 25 – 30, Washington, DC.
 56. *Dimas, A.A., Lottati, I., Miller, R.H., Strumolo, G.S. and Bernard, P.S., 2000. Turbulent Flow Forces on Hydraulic Valves: A Parallel Vortex Simulation Method. Proc. ASME Fluids Engineering Division FED-253, 553-558, Orlando, Florida.
 57. *Collins, J.P., Dimas, A.A. and Bernard, P.S., 1999. A Parallel Adaptive Fast Multipole Method for High Performance Vortex Method Based Simulations. Proc. ASME Fluids Engineering Division FED-250, 307-314, Nashville, Tennessee.
 58. Bernard, P.S., Dimas, A.A. and Lottati, I., 1999. Vortex Method Analysis of Turbulent Flows. Proc. The First International Conference on Vortex Methods, 137-155, Kobe, Japan.
 59. *Dimas, A.A., Bernard, P.S. and Krispin, J., 1999. An Adaptive, Fast, Parallel Vortex Method for Numerical Simulations of Turbulent Separated Flows. Proc. 37th AIAA Aerospace Sciences Meeting AIAA-99-0155, 1-9, Reno, Nevada.
 60. *Dimas, A.A., Collins, J.P. and Bernard, P.S., 1998. A Fast, Parallel Vortex Method For Turbulent Flow Simulation. Proc. ASME Fluids Engineering Division Summer Meeting FEDSM-98-5000, 1-8, Washington, DC.
 61. Shah, A.D., Dimas, A.A. and Humphrey, J.D., 1997. Elastodynamics of Intracranial Saccular Aneurysms. Proc. ASME Advances in Bioengineering BED-36, 97-98, Dallas, Texas.
 62. *Dimas, A.A., 1997. Large Wave Simulations (LWS) of Free-Surface Flows. Proc. ASME Fluids Engineering Division Summer Meeting FEDSM-97-3408, 1-6, Vancouver, Canada.
 63. *Dimas, A.A. and Triantafyllou, G.S., 1995. Numerical Study of Langmuir Circulations in Turbulent Shear Flows with a Free Surface. Proc. 10th Symposium on Turbulent Shear Flows 3, 27:1-6, University Park, Pennsylvania.
 64. Triantafyllou, G.S. and Dimas, A.A., 1994. Barotropic/Baroclinic Dynamics of Large-Scale Geophysical Flows. Proc. BOSS 6th International Symposium on the Behaviour of Offshore Structures 2, 359-367, Cambridge, Massachusetts.
 65. Dimas, A.A. and Triantafyllou, G.S., 1993. Shear-Flow/Free-Surface Interaction in a Density-Stratified Fluid. Proc. ISOPE Third International Offshore and Polar Engineering Conference 3, 479-486, Singapore.
 66. Triantafyllou, G.S. and Dimas, A.A., 1992. Large Scale Vortices in the Ocean and Upwelling. Proc. BOSS 5th International Symposium on the Behaviour of Offshore Structures 1, 121-133, London, UK.
 67. *Dimas, A.A. and Triantafyllou, G.S., 1992. Free-Surface Signature of Submerged Shear Flow. Proc. ISOPE Second International Offshore and Polar Engineering Conference 3, 253-261, San Francisco, California.
 68. *Dimas, A.A. and Triantafyllou, G.S., 1991. Numerical Study of Shear Flow/Free Surface Interactions. In Dynamics of Bubbles and Vortices near a Free Surface (Edited by Sahin, I. and Tryggvason, G.) AMD-119, 17-29, ASME, New York.

E. Abstracts in Conferences

1. Chalmoukis, I.A. and Dimas, A.A., 2019. Turbulence of oscillatory flow over three-dimensional vortex ripples. Proc. EGU General Assembly, Vienna, Austria.
2. Leftheriotis, G.A. and Dimas, A.A., 2019. Sediment transport over moving bed. Proc. EGU General Assembly, Vienna, Austria.
3. *Dimas, A.A., Kolokythas, G.A., and Dimakopoulos, A.S., 2011. Large-wave simulation of spilling breaking and undertow current over constant slope beach. Proc. 64th Annual Meeting of the APS Division of Fluid Dynamics, Baltimore, Maryland.
4. *Dimas, A.A., 2011. Linear Instability of Suspended Sediment Two-Phase Flow. Proc. International Conference on the Status and Future of the World's Large Rivers, Vienna, Austria.
5. *Dimakopoulos, A.S. and Dimas, A.A., 2010. Large-Wave Simulation of Three-Dimensional Flow Induced by Oblique Wave Propagation Over Constant Slope Beach. Proc. 8th Euromech Fluid Mechanics Conference, S14-3, Bad Reichenhall, Germany.
6. *Grigoriadis, D.G.E., Dimas, A.A. and Balaras, E., 2010. Oscillating Turbulent Flow Over a Rippled Bottom. Proc. 8th Euromech Fluid Mechanics Conference, S6-18, Bad Reichenhall, Germany.
7. *Dimas, A.A. and Fialkowski, L.T., 2000. Large-Wave Simulation (LWS) of Free-Surface Flows. 6th U.S. National Congress on Computational Mechanics, Dearborn, Michigan.
8. *Dimas, A.A., Lottati, I. and Bernard, P.S., 2000. Parallel Vortex Method Simulation of Turbulent Flow in a Hydraulic Spool Valve. 53rd Annual Meeting of the APS Division of Fluid Dynamics, Washington DC.
9. Bernard, P.S., Dimas, A.A. and Lottati, I., 2000. A Vortex Method for Turbulent Flow Simulation, with Applications. 53rd Annual Meeting of the APS Division of Fluid Dynamics, Washington DC.
10. Bernard, P.S. and Dimas, A.A., 1998. Vortex Method Simulation of High Reynolds Number Prolate Spheroid Flow. Proc. 51st Annual Meeting of the APS Division of Fluid Dynamics, Philadelphia, Pennsylvania.
11. Duncan, J.H., Miller, M.P., Dimas, A.A., Nennstiel, T.A. and Prostler, S., 1998. Incipient Breaking of Steady Waves in the Presence of Surface Wakes. ONR Workshop on Free-Surface and Wall-Bounded Turbulence and Bubbly Flows, Pasadena, California.
12. *Dimas, A.A., 1997. Shear Flows Free-Surface Signature and Effect on Free-Surface Waves: Theory and Numerical Simulations. 5th Panhellenic Conference on Complexity and Chaotic Dynamics of Nonlinear Systems, Thessaloniki, Greece.
13. *Dimas, A.A., 1995. Large Wave Simulation of Breaking Waves. Proc. 48th Annual Meeting of the APS Division of Fluid Dynamics, Irvine, California.
14. *Dimas, A.A., 1994. Turbulent Wake Shear Flow at Low Froude Numbers. Proc. 47th Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, Georgia.
15. Dimas, A.A. and Triantafyllou, G.S., 1994. Free-Surface Wave Breaking Caused by a Subsurface Vorticity Field. Proc. 12th U.S. National Congress of Applied Mechanics, Seattle, Washington.
16. *Dimas, A.A. and Triantafyllou, G.S., 1993. Turbulent Shear-Flow/Free-Surface Interaction. Proc. 46th Annual Meeting of the APS Division of Fluid Dynamics, Albuquerque, New Mexico.
17. *Dimas, A.A. and Triantafyllou, G.S., 1993. Nonlinear Interaction of Shear Flow with a Free Surface. Proc. Annual Meeting of the Society for Industrial and Applied Mathematics, Philadelphia, Pennsylvania.
18. *Dimas, A.A. and Triantafyllou, G.S., 1992. Three-Dimensional, Shear-Flow/Free-Surface Interaction. Proc. 45th Annual Meeting of the APS Division of Fluid Dynamics, Tallahassee, Florida.
19. Triantafyllou, G.S. and Dimas, A.A., 1992. Nonlinear Interaction of Shear Flows with a Free Surface. Proc. XXV ICTAM Symposium, Haifa, Israel.

6. INVITED LECTURES

- Large-eddy simulation of nearshore processes based on a two-fluid approach and an immersed boundary method. HR Wallingford, UK, 14 July 2022.
- Ports resilience and adaptation to climate change. University of Patras, World Meteorological Day, 23 March 2022.
- Sediment transport and morphodynamics of vortex ripples under oscillatory flow conditions.

- Swansea University, May 2019.
- Large-eddy simulation of nearshore processes based on a two-fluid approach and an immersed boundary method. DELTARES Seminar Series, Delft, The Netherlands, 28 August 2018.
 - Numerical simulation of turbulent flows and sediment transport. Winter School, University of Cyprus, Nicosia, Cyprus, 11-13 February 2015.
 - Introductory lecture series on sediment transport in fluvial, estuarine and coastal environment. Winter School, Université Catholique de Louvain, Louvain-la-Neuve, Belgium, 12-15 March 2014.
 - Coastal Exploitation and Protection Works: Proper and Wrong Design Practices. Technical Chamber of Greece – Western Greece Regional Meeting on “Coastal Erosion”, Patras, 9 April 2011.
 - A Proposal for Environmental Management of Patras Port. 2nd PAN-European FORUM “Environmental Status of Southeast Europe Ports: strengths, weaknesses, opportunities and threats”, Patras, 21 June 2010.
 - Vortex Computational Algorithm for Turbulence. IBM, Watson Research Center, Yorktown Heights, New York, 17 December 1999.
 - A Fast, Grid-Free, Vortex Methodology for Turbulent Flow Modelling. NASA Langley Research Center - Computational Fluid Dynamics Group, Langley, Virginia, 23 Nov. 1999.
 - Fast, Parallel, Grid-Free, CFD Software for Automotive and Energy Engineering Applications. The Chrysler Corporation Technology Center, Auburn Hills, Michigan, 8 Dec. 1997.
 - Large Wave Simulation of Spilling Breaking Waves. Workshop by ONR (Office of Naval Research) on “Free-Surface and Wall-Bounded Turbulence and Turbulent Flows”, Pasadena, California, 26 Feb. 1996.
 - Free Surface Signature of Turbulent Shear Flows. Department of Mechanical Engineering, University of Maryland in Baltimore County, Baltimore, Maryland, 6 Oct. 1995.
 - Spectral Methods in Free Surface Flows. Department of Material and Nuclear Engineering, University of Maryland in College Park, College Park, Maryland, 28 Mar. 1995.
 - Nonlinear Interaction of Shear Flow with a Free Surface. Department of Mechanical Engineering, University of Maryland in College Park), College Park, Maryland, Sep. 1993, and Department of Mechanical Engineering, New Jersey Institute of Technology, Newark, New Jersey, Apr. 1993.
 - Shear-Flow/Free-Surface Interaction. The Benjamin Levich Institute for Physico-Chemical Hydrodynamics, The City College of CUNY (City University of New York), New York, New York, 5 Nov. 1991.
 - Interaction of Wakes of Floating Bodies with the Free Surface. MIT Sea Grant Marine Industry Collegium on “Interaction of Flow-Fields with Cables, Flexible Risers and Tethers”, Cambridge, Massachusetts, Apr. 1991.

7. RESEARCH

A. Interests

- Coastal Hydraulics, Waves and Sediment Transport (Numerical Simulation and Physical Modeling).
- Coastal, Port and Hydraulic Engineering.
- Computational and Theoretical Fluid Mechanics.

B. Projects

40 projects while in Greece (29 as project coordinator or principal investigator) and 6 while in the USA (4 as principal investigator) of basic and applied nature.

C. Recent Basic Research Projects

- SEDIMARE: Sediment transport and morphodynamics in marine and coastal waters with engineering solutions.
Funding: Program MSCA Doctoral Networks 2021, Horizon Europe, European Union
Budget: €2.6million. Duration: 2023-2027. Participation: Project Coordinator.
- Computational Coastal Engineering: sediment transport and beach morphodynamics.
Funding: GSRT
Budget: €170000. Duration: 2017-2019. Participation: Project Coordinator.
- Large scale experiments for an alternative erosion control measure using sand-filled GEOSystems (GEOS).
Funding: Program Hydralab+, European Union.
Duration: 2018-2019. Participation: Partner.
- SEDITRANS: Sediment transport in fluvial, estuarine and coastal environment.
Funding: Program FP7-PEOPLE-2013-ITN, European Union
Budget: €3.7million. Duration: 2013-2017. Participation: Project Coordinator.
- SEAWIND: Performance based engineering of offshore wind turbines
Funding: Program Bilateral R&D Cooperation between Greece and China 2012-2014, GSRT and European Union
Budget: €500000. Duration: 2012-15. Participation: Principal Investigator of Univ. Patras.
- SIMUCOAST: High performance computing for three-dimensional simulation of coastal processes.
Funding: Program ARISTEIA, GSRT and European Union
Budget: €175000. Duration: 2012-15. Participation: Principal Investigator.
- Numerical simulation of seabed morphology evolution due to sediment transport induced by wave breaking in the surf zone.
Funding: Program “Karatheodori” of University of Patras.
Budget: €33000. Duration: 2011-14. Participation: Principal Investigator.
- Numerical study of steady and unsteady flow in submerged seawater intake pipe.
Funding: METKA A.E.
Budget: €16500. Duration: 2011. Participation: Principal Investigator.
- Numerical prediction of waves, currents and environmental transport parameters in the coastal and sea zone of the Old and New Port of Patras.
Funding: Program PENED of GSRT.
Budget: €90000. Duration: 2005-2009. Participation: Principal Investigator.

D. Recent Applied Research Projects

- Planning of interventions and works for reducing the intensity of flooding in critical areas of the Alfeios River basin, including Kladeos River and Erymanthos River, following the forest fires of 2021.
Funding: Region of Western Greece.
Duration: 2021-2023. Participation: Principal Investigator.
- Field measurements and data analysis of waves and currents in the coastal areas of Agia Napa, Askos and Larnaka in Cyprus.
Funding: MARNET Engineering Consultants (<https://marnet.gr/>)
Duration: 2020-2023. Participation: Principal Investigator.
- Coastal erosion assessment of the coastline between Rogitika and Tsoukaleika in Western Achaia, Greece, and design of sustainable and mild coastal protection works based on the data provided by the European project TRITON.
Funding: Region of Western Greece
Duration: 2020-2022. Participation: Principal Investigator.
- Assessment of Erosion of the Northern Peloponnese Coasts in the Corinthian Gulf and Organization of their Protection Planning.
Funding: Hellenic Ministry of Infrastructure, Transportation and Networks

- Duration: 2016. Participation: Principal Investigator.
- Flow measurements and visualization in a sea-water intake physical model (Samsun, Turkey).
 - Funding: METKA A.E.
 - Duration: 2010-2011. Participation: Principal Investigator.
- Study of the effect of the proposed port at Rovies (Euboia, Greece) on wave propagation and sediment transport by numerical simulation.
 - Funding: Municipality of Elimnion.
 - Duration: 2010-2011. Participation: Principal Investigator.
- Flow measurements and visualization in a sea-water intake physical model (Aliveri, Greece).
 - Funding: METKA A.E.
 - Duration: 2009-2010. Participation: Principal Investigator.
- Study of the effect of the proposed port at Kiveri (Argolida, Greece) on wave propagation and sediment transport by numerical simulation.
 - Funding: Municipality of Lernas.
 - Duration: 2009-2010. Participation: Principal Investigator.
- Study of the effect of the proposed port at Pentati (Corfu, Greece) on wave propagation and sediment transport by numerical simulation.
 - Funding: TOMH A.E.M.E.Y.
 - Duration: 2009. Participation: Principal Investigator.
- Study of detached breakwater effectiveness on shore protection at Legraina (Attiki, Greece) by numerical simulation of waves, currents and sediment transport.
 - Funding: ECC A.E.
 - Duration: 2009. Participation: Principal Investigator.