Professor Emeritus A. Liakopoulos
Department of Civil Engineering
University of Thessaly,
Volos, GR-38334, Greece

Phone: ++30- 2-4210-74111
Fax: ++30- 2-4210-74169
e-mail: aliakop@uth.gr

Education

Ph.D.	Engineering Mechanics, University of Florida, 1982
M.Sc.	Engineering Science, University of Florida, 1979
Dipl. Ing.	Civil Engineering, Aristotle University of Thessaloniki, 1977

Professional Experience

Chairman, Department of Civil Engineering, University of Thessaly, 2002- 2006
Acting chairman, Department of Civil Engineering, University of Thessaly, 1998- 2000
Head, Division of Hydraulics and Environmental Engineering, 2019-2021
Director, Hydromechanics and Environmental Engineering Laboratory, 2004- 2021
Professor, Department of Civil Engineering, University of Thessaly, 1998- 2021
Professor of Mechanical Engineering and Mechanics, Lehigh University, 1998
Associate Professor of Mechanical Engineering and Mechanics, Lehigh University, 1992-1998
Assistant Professor of Mechanical Engineering and Mechanics, Lehigh University, 1988-1992
CFD Group Leader, System Dynamics, 1987-1988
Research Engineer, System Dynamics, 1983-1987
Visiting Assistant Professor, University of Florida, 1982-1983

Honors

CEAS Award, Lehigh University, 1997
ASME Curriculum Innovation Award, 1996
Ruth and Joel Spira Award, Lehigh University, 1991
Excellence in Teaching Award, University of Florida, 1983
Hellenic Mathematical Society Award, 1972

Biographical Sketch

Dr. A. Liakopoulos is Professor Emeritus at the University of Thessaly in Greece, and former director of the Hydromechanics and Environmental Engineering Laboratory. Before joining University of Thessaly, Dr. Liakopoulos served as Professor of Mechanical Engineering and Mechanics at Lehigh University, in Pennsylvania, USA. His primary research interests are turbulence, nonlinear dynamics, modeling of complex environmental processes, particle methods with emphasis on Smoothed Particle Hydrodynamics (SPH), and applications of nano-science and nano-technology to environmental problems.

Dr. Liakopoulos received his undergraduate degree at the Aristotle University of Thessaloniki, Greece, and his graduate degrees at the University of Florida, Gainesville, Florida. After graduation, Dr. Liakopoulos joined System Dynamics as a research engineer responsible for aerodynamic modeling, computational fluid dynamics, stochastic modeling, and computational aspects of simulations. He became SDI's Computational Fluid Dynamics Group Leader, and in this capacity, he supervised projects on computational methods for high Reynolds number external and internal flows, numerical grid generation, vectorization of computer codes, and development of parallel processing algorithms. Since joining Lehigh University, he has conducted research on transitional flows, interfacial instabilities, Galerkin methods for computational fluid dynamics, and application of image processing to fluid dynamics. His research has been funded by NSF, NASA, AT&T, GSRT (Greece), Hellenic Foundation for Research & Innovation (H.F.R.I.), European Commission, Ministry of Education (Greece) and industrial consortia.

Dr. Liakopoulos is the author of over hundred fifty technical publications and co-editor of a volume on the Stability of Convective Flows published by the American Society of Mechanical Engineers. He is the author of two textbooks on Fluid Mechanics and Hydraulics. He is the recipient of five awards from the American Society of Mechanical Engineers, Lehigh University, University of Florida, and the Hellenic Mathematical Society. Twenty-one graduate students have graduated with Dr. Liakopoulos as their major professor. He currently advises three Ph.D. students. Dr. Liakopoulos is a reviewer for *Physics of Fluids*, the *International Journal of Heat and Mass Transfer*, the *ASME Journal of Heat Transfer*, the *AIAA Journal*, and the *Journal of Fluids and Structures*. He served in visiting positions at Brown University, Providence, RI, and at University of Florida, Gainesville, FL, in USA.

He is a member of the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Physical Society, the International Union of Theoretical and Applied Mechanics, the International Association for Hydraulic Research, Sigma Xi, Pi Tau Sigma, and Phi Kappa Phi.

RESEARCH PROJECTS (Principal Investigator)

1. MULTISCALE MODELLING OF ENVIRONMENTAL AND FREE SURFACE FLOWS WITH PARTICLE-BASED METHODS (MOVEFREE) Project No. 4584, Hellenic Foundation for Research & Innovation (H.F.R.I.), 6/4/2022-5/4/2025, Budget: 173,649.00 €

2. «Numerical Simulation and experimental study of flows in micro and nano-conduits», General Secretariat for Research & Development, Greece, 15/11/05-30/6/09, 120.420€

3. «Analysis and Modeling of chaotic behavior in fluid systems: from microscale to design», Greek Ministry of Education, Pythagoras Program, 1/3/04-31/12/07, 85.000€

4. «Bringing the OpenMI to Life», European Commission, DG ENV. D.1, Responsible for the research conducted at the University of Thessaly, 1/10/06-30/9/09, 143.000€

5. COST F2 Electrochemical sensors for flow measurements, 1999- 2004

6. Low-Dimensional Models for Thermocapillary Convective Flows in Crystal Growth Processes, NASA, 06/24/94 – 08/22/96, $98647.

7. Wavelet Techniques in Data Compression and Dynamic Model Identification, Center for Process Modeling and Control, 01/01/94 – 12/31/96, $128972.

8. Stability Analysis of Interfaces, National Science Foundation, 08/01/91 – 01/31/95, $80000.

9. Instrumentation for research on convective cooling of electronic equipment, AT&T Foundation, 1991-1993, $38000.

10. Thermal Design and Optimization of Multichip Modules, Center for Manufacturing Systems Engineering, 1990-1992, $37000.

11. Cooling Methods for Second Level Electronic Packages, Alcoa Foundation, 1990-1991, $15000.

12. Wavelet-based Methods in Image Processing and Scientific Computing, Martin Marietta, 1990, $10000.

13. Development and testing of parallel processing system, 01/07/00-30/06/01, 6.000€

RESEARCH PROJECTS (Senior Investigator)

1. Acronym: FaMaVaSu: Fatigue of Materials Used in Vascular Surgery, 19/2/2014-31/7/2015, 246000€
2. Contribution to the study of hydrodynamic performance of Archimedean Screw pumps 2011-2013

RESEARCH INFRASTRUCTURE DEVELOPMENT PROJECTS (P.I.)

1. University of Thessaly Laboratory Equipment Procurement Program, 2005-2007, 401.000€
2. Curriculum Development ΕΠΕΑΕΚ–ΙΙ, University of Thessaly, 2004-2008, 248.000€
3. Departmental Laboratory Equipment Procurement & Fellowships, 01/01/05-31/12/05, 8.400€

TEACHING

Undergraduate courses:
Fluid Mechanics (University of Florida, Lehigh University, University of Thessaly),
Environmental Fluid Mechanics (University of Thessaly),
Thermodynamics (Lehigh University),
Hydraulics (University of Thessaly),
Computational Hydraulics (University of Thessaly),
Ordinary Differential Equations (University of Florida)

Postgraduate courses:
Convective Heat Transfer (Lehigh University),
Boundary Layer Theory (Lehigh University),
Dynamical Systems and Simulation (University of Thessaly),
Applied Mathematics-Partial Differential Equations (University of Thessaly),
Spectral Methods (Lehigh University),
Fluid / Structure Interaction. Offshore Structures (University of Thessaly).

M.S. Theses Supervision

Completed (14): F. Alfitri, T.-H. Huang, D. Rakos, M. Muhammad, H. Gunes, G. Brown, X. Chen, M. Levine, T. Marquette, Y. Kim, M. Watson, D. Kasiteropoulou, Ch. Neveskiotis, P. Kalyva.

Ph. D. Dissertation Supervision

Completed (7): X. Huang, A. Pinarabasi, H. Gunes, R. Sahan, Y. Kim, F. Sofos, (2009), D. Kasiteropoulou, (2009), E. Chatzoglou, (2025).
In progress (1): P. Trimi.

Member of Ph. D. Dissertation Examination Committees

- Ph.D. Committees (1989-2001), Lehigh University (16)

- Ph.D. Advisory Committees, University of Thessaly

C. Fafoutis	University of Thessaly (2008)
S. Tsitsifli	University of Western Macedonia (2010)
K. Gonelas	University of Thessaly (2015)
A. Charakopoulos	University of Thessaly (2015)
A. Fragkou	University of Thessaly (2017)
E.G. Karvelas	University of Thessaly (2019)
N. Mellios	University of Thessaly (2020)
A. Papadopoulou	University of Thessaly (in progress)
M. Patelis	University of Thessaly (in progress)
A. Boulamatsis	University of Thessaly (in progress)
I. Petikas	University of Thessaly (2020)
A. Kordatou-Chrissaiti	University of Thessaly (in progress)
Z. Papavasileiou	University of Thessaly (in progress)
Ch. Liosis	University of Thessaly (in progress)
A. Leousidis	University of Thessaly (in progress)

- Ph.D. Examination Committees (1998-present), University of Thessaly, Aristotle University of Thessaloniki, Democritus University of Thrace

V. Kanakoudis	Aristotle University of Thessaloniki (1998)
E. Kolokitha	Aristotle University of Thessaloniki (1999)
Al. Mentes	Aristotle University of Thessaloniki (2001)
Ch. Naris	University of Thessaly (2006)
K. Stamoulis	University of Thessaly (2096)
A.A. Sassos	Democritus University of Thrace (2010)
Ch. Boutsioukis	Aristotle University of Thessaloniki (2010)
S. Pantazis	University of Thessaly) (2011)

N. Darivianakis	Aristotle University of Thessaloniki (2011)
O. Zogou	University of Thessaly (2011)
E. Axarli	Aristotle University of Thessaloniki (2013)
C. Tantos	University of Thessaly (2016)
D. Razis	University Of Patras (2020)
D.T. Kofinas	University of Thessaly (2020)

SERVICE

University of Thessaly
Member of the University Senate (2001 - 2006)
Member of the University Academic Development Committee (2002- 2008)
Member of the University Research Committee (2003-2008)
Member of the University Rules and Procedures Committee (2013-2014)
Chairman of the Departmental Curriculum Committee (2016-2017)

Lehigh University

Graduate Research Committee, Member (1996-1998)
Ph.D. Qualifying Examination Committee (1992-1996)
Representative to University Forum (1990- 1993)
Departmental Computer Equipment Committee, Member.

Technical Society Membership
International Association for Hydraulic Research, Hellenic Hydrotechnical Association, Technical Chamber of Greece, American Physical Association (APS), Hellenic Society of Theoretical and Applied Mechanics (HSTAM)

Technical Committee Membership

Fluid Mechanics Committee ASME (1992-1996)

Environmental Heat Transfer Committee (ASME, K - 19 committee, 1992-1996).

Reviewer for the following journals:

Physics of Fluids, International Journal of Heat and Mass Transfer, AIAA Journal, Journal of Fluids and Structures, ASME Journal of Heat Transfer, ASME Journal of Electronic Packaging, Journal of Thermophysics, ASME Journal of Engineering for Industry, Mathematical and Computer Modelling, ASCE Journal of Hydraulics, ASME Journal of Pipelines, Environmental Processes.

Reviewer of research proposals for:

National Science Foundation (USA), National Technical University of Athens, Technical University of Crete, University of Patras.

Representative Invited Lectures/ Seminars

Low-dimensional Models of Transitional Convective Flows, Cornell University, Ithaca, New York, October 22, 1996.

Low-dimensional Models of Transitional Flows, University of Maryland, College Park, April 26, 1996.

Wavelet Techniques in Data Compression, DuPont Headquarters, Wilmington, Delaware, November 22, 1994.

Convective Flows in Cavities and Vertical Channels, University of Pennsylvania, Philadelphia, November 4, 1993.

Instabilities in Extended Systems, Lehigh University, Physics Department, 1992.

Convective Flows in Cavities, Seminar, The Levich Institute, City University of New York, New York, December 10, 1991.

Thermally Driven Flows in Enclosures, Polytechnic University, Brooklyn, New York, April 11, 1991.

Thermally Driven Flows in Enclosures, Aluminium Company of America Technical Center, December 3, 1990.

Wavelets in Signal Processing and Computational Fluid Dynamics, University of Tennessee at Knoxville, November 12, 1990.

Models of Thermal Convection: Boussinesq, Anelastic and Low Mach Number, Brown University, Providence, Rhode Island, USA, November 28, 2014.

Rayleigh Benard Convection, Brown University, Rhode Island, USA, December 5, 2014.

PUBLICATIONS

BOOKS

B-1 A. Liakopoulos: "Fluid Mechanics", Tziolas Publications (in Greek), 2nd edition, 2019. ISBN 978-960-418-774-4

B-2 A. Liakopoulos: "Hydraulics. Flow in closed conduits. Hydraulic Machinery" (in greek), (2nd edition) Tziolas Publications, 2014. ISBN 978-960-418-450-7

B-3 A. Liakopoulos: "Hydraulics. Flow in closed conduits. Hydraulic Machinery. Open Channels" (in Greek), (3rd edition) Tziolas Publications, 2020. ISBN 978-960-418-775-1

LECTURE NOTES

LN-1 A. Liakopoulos: "Computational Fluid Dynamics", Lecture Notes, University of Thessaly, 2009.

LN-2 A. Liakopoulos & F. Sofos: "Computational Fluid Dynamics with MATLAB", Lecture Notes, University of Thessaly, 2016.

LN-3 A. Liakopoulos, "Wall Turbulence: An introduction" (in English).

EDITORSHIPS

E-1 P.G. Simpkins and A. Liakopoulos: "Stability of Convective Flows", ASME Press, 1992.

E-2 A. Kungolos, A. Liakopoulos, et al.: "Proceedings, International Conference Protection and Restoration of the Environment VI", Skiathos, Greece, July 1-5, 2002, Greece, Volumes I, II, III.

E-3 A. B. Liakopoulos, A.G. Kungolos, G.P. Korfiatis: "Protection and Restoration of the Environment", special issue "*Water, Air & Soil Pollution: Focus*" (WAFO), Kluwer Publications, 2003.

E-4 A. Liakopoulos, B. Kanakoudis, et al.: "Proceedings of the First Joint Conference EYE-EEDYP", Volumes I,II, Volos, May 17-30, 2009.

E-5 A. Liakopoulos, A. Kungolos, C. Christodoulatos, A. Koutsospyros: "Proceedings, International Conference Protection and Restoration of the Environment XII", Skiathos, Greece, June 29 to July 3, 2014, Greece, ISBN 978-960-88490-6-8.

E-6 A. Liakopoulos, E. Mystakidis, A. Giannakopoulos: "Advances in Civil Engineering Research", Grafima Publications, 2014, ISBN: 978-960-88490-4-4.

BOOK CHAPTERS

BC-1 T.E. Karakasidis and A. Liakopoulos, "Understanding slip at the nanoscale in fluid flows using atomistic simulations", in "Detection of pathogens using micro- and nano-technology", G. Zuccheri, N. Asproulis (eds.), International Water Association, IWA Publishing, 2012.

BC-2 C. Laspidou, A. Liakopoulos and G. Spiliotopoulos, "A 2D cellular automaton biofilm detachment algorithm", Cellular Automata, Vol. 7495 of the series Lecture Notes in Computer Science, pp.415-425, 2012.

JOURNAL ARTICLES

J-1 A. Liakopoulos and C.C. Hsu: "On a Class of Compressible Laminar Boundary - Layer Flows and the Solution Behaviour Near Separation", Journal of Fluid Mechanics, Vol. 149, pp. 339-353, December (1984).

J-2 A. Liakopoulos: "Explicit Representations of the Complete Velocity Profile in a Turbulent Boundary Layer", AIAA Journal, Vol. 22, No. 6, pp. 844-846, June (1984).

J-3 A. Liakopoulos: "Computation of High-Speed Turbulent Boundary - Layer Flows Using the k-ε Turbulence Model", International Journal for Numerical Methods in Fluids, Vol. 5, No. 1, pp. 81-97, January (1985).

J-4 A. Liakopoulos and W. H. Boykin: "Singular Perturbation Analysis of Speed Controlled Reciprocating Compressors", the Transactions of the ASME, Journal of Dynamic Systems, Measurement and Control, Vol. 111, No. 2, pp. 313 – 321, June (1989).

J-5 D. Brzakovic, A. Liakopoulos and L. Hong: "Spline Models for Boundary Detection/Description: Formulation and Performance Evaluation", CGVIP: Graphical Models and Image Processing, Vol. 53, No. 4, pp. 392-401, July (1991).

J-6 P. A. Blythe and A. Liakopoulos, E. Haruta: "Thermally Driven Flows at Low Prandtl Numbers: An Extension of the Prandtl-Batchelor Theorem", International Journal of Engineering Science, Vol. 33, No. 12, pp. 1699-1711, (1995).

J-7 A. Pinarbasi and A. Liakopoulos: “The Role of Variable Viscosity in the Stability of the Channel Flow”, International Communications in Heat and Mass Transfer, Vol. 22, No. 6, pp. 837-847, (1995).

J-8 A. Pinarbasi and A. Liakopoulos: “Stability of Two-Layer Poiseuille Flow of Carreau-Yasuda and Bingham-Like Fluids”, Journal of Non-Newtonian Fluid Mechanics, Vol. 57, pp. 227-241, (1995).

J-9 A. Pinarbasi and A. Liakopoulos: “The Effect of Variable Viscosity on the Interfacial Stability of Two-Layer Poiseuille Flow”, Physics of Fluids, Vol. 7, No. 6, June, pp. 1318-1324, (1995).

J-10 A. Pinarbasi and A. Liakopoulos: “On the Influence of Temperature and Viscosity Fluctuations on Interfacial Instability”, International Communications in Heat and Mass Transfer, Vol. 23, No. 4, pp. 485-493, (1996).

J-11 P. G. Simpkins and A. Liakopoulos: “Eddy Structures in a Slot with Periodic Heating”, Journal of Heat Transfer, Vol. 119, No. 2, pp. 203-237, (1997).

J-12 H. Gunes, A. Liakopoulos, and R. A. Sahan: “Low-Dimensional Description of Oscillatory Thermal Convection: The Small Prandtl Number Limit”, Theoretical and Computational Fluid Dynamics, Vol. 9, No. 1, pp. 1-16, (1997).

J-13 H. Gunes, R. A. Sahan, and A. Liakopoulos: “Spatio-Temporal Structures of Buoyancy-Induced Flow in a Vertical Channel”, Numerical Heat Transfer, Part A, Vol. 32, No. 1, pp. 51-62, (1997).

J-14 A. Liakopoulos, P. A. Blythe, and H. Gunes: “A Reduced Dynamical Model of Convective Flows in Tall Laterally Heated Cavities”, Proceedings of the Royal Society of London A, Vol. 453, pp. 663-672, (1997).

J-15 R. A. Sahan, A. Liakopoulos, and H. Gunes: “Reduced Dynamical Models of Nonisothermal Grooved Channel Flow”, Physics of Fluids, Vol. 9, No. 3, pp. 551-565, (1997).

J-16 M. Watson, A. Liakopoulos, D. Brzakovic, and C. Georgakis: "A Practical Assessment of Process Data Compression Techniques", Industrial and Engineering Chemistry Research, Vol. 37, No. 1, pp. 267-274, (1998).

J-17 R. A. Sahan, H. Gunes, and A. Liakopoulos: "A Modeling Approach to Transitional Channel Flow", Computers and Fluids, Vol. 27, No. 1, pp. 121-136, (1998).

J-18 K. Cipolla, A. Liakopoulos, and D. O. Rockwell: "Quantitative Imaging in Proper Orthogonal Decomposition of Flow Past a Delta Wing", AIAA Journal, Vol. 36, No. 7, pp. 1247-1255, (1998).

J-19 A. Oztekin, L. J. Cumbo, A. Liakopoulos: "Temporal Stability of Boundary-Free Shear Flows: The Effect of Diffusion", Theoretical and Computational Fluid Dynamics, Vol. 13, No. 2, pp. 77-90, (1999).

J-20 H. Gunes and A. Liakopoulos: "Three – dimensional convective cooling in a vertical channel with flush – mounted heat sources", International Journal of Heat and Mass Transfer, Vol. 46(5), pp 791-808, (2003).

J-21 T. E. Karakasidis and A. B. Liakopoulos: "Two-regime dynamical behavior in Lennard-Jones systems: Spectral and Rescaled Range Analysis", Physica A: Statistical Mechanics and its Applications. Vol. 333, pp.225-240, (2004).

J-22 T. E. Karakasidis, N. Cholevas, A. B. Liakopoulos: "Parallel Short Range Molecular Dynamics Simulations on Computer Clusters: Performance Evaluation and Modeling", Mathematical and Computer Modelling, Vol. 42, pp. 783-798, (2005).

J-23 Y. Kim, D. Rockwell and A. Liakopoulos: "Quantitative flow interpretation of vortex buffeting on an aircraft tail via proper orthogonal decomposition (POD)", AIAA Journal, Vol. 43(3) pp.550-559, (2005).

J-24 T.E. Karakasidis, A. Fragkou, A. Liakopoulos: "System dynamics revealed by recurrence quantification analysis: Application to molecular dynamics simulations", Physical Review E 76 (2): Art. No. 021120 Part 1 DOI: 10.1103/PhysRevE.76.021120, (2007).

J-25 Filippos Sofos, Theodoros Karakasidis, Antonios Liakopoulos: ''Transport properties of liquid argon in krypton nanochannels: Anisotropy and non-homogeneity

introduced by the solid walls'', International Journal of Heat and Mass Transfer, Vol. 52, Issue 3-4, pp. 735-743, https://doi.org/10.1016/j.ijheatmasstransfer.2008.07.022, (2009).

J-26 T. Karakasidis, F. Sofos, A. Liakopoulos: ''Non- equilibrium molecular dynamics investigation of parameters affecting planer nanochannel flows'', Contemporary Engineering Sciences, Vol. 2, no. 6. pp. 283-298, (2009).

J-27 T. Karakasidis, A. Liakopoulos, A. Fragou, P. Papanicolaou: ''Recurrence quantification analysis of temperature fluctuations in a horizontal round heated turbulent jet,'' International Journal of Bifurcation and Chaos, Vol. 19, No. 8, pp. 2487-2498, https://doi.org/10.1142/S0218127409024268, (2009).

J-28 F. Sofos, T. E. Karakasidis, A. Liakopoulos, "Effects of wall roughness on flow in nanochannels", Physical Review E, 79, 026305, DOI: 10.1103/PhysRevE.79.026305, (2009).

J-29 F. Sofos, T. E. Karakasidis, A. Liakopoulos, ''Effect of wall roughness on shear viscosity and diffusion in nanochannels'', International Journal of Heat & Mass Transfer, Vol. 53, Issue 19-20, pp. 3839-3846, https://doi.org/10.1016/j.ijheatmasstransfer.2010.04.037, (2010).

J-30 D. Kasiteropoulou, T. E. Karakasidis, and A. Liakopoulos, ''Dissipative Particle Dynamics: Investigation of Parameters Affecting Planar Nanochannel Flows'', Materials Science and Engineering B, Vol. 176, No. 19, pp. 1574-1579, doi: 10.1016/j.mseb.2011.01.023, (2011).

J-31 F. Sofos, T. E. Karakasidis, A. Liakopoulos, ''Surface wettability effects on flow in rough wall nanochannels'', Microfluidics and Nanofluidics, v.12, Issue 1-4, pp. 25-31, doi: 10.1007/s10404-011-0845-y, DOI 10.1007/s10404-011-0845-y, (2012).

J-32 D. Kasiteropoulou, T.E. Karakasidis, and A. Liakopoulos, ''A Dissipative Particle Dynamics study of flow in periodically grooved nanochannels'', International Journal for Numerical Methods in Fluids, v. 68, Issue 9, pp. 1156–1172, DOI: 10.1002/fld.2599, (2012).

J-33 A.E. Giannakopoulos, F. Sofos, T.E. Karakasidis, A. Liakopoulos, ‘‘Unified description of size effects of transport properties of liquids flowing in nanochannels’’, International Journal of Heat and Mass Transfer, Vol. 55, Issues 19-20, pp. 5087-5092, (2012) https://doi.org/10.1016/j.ijheatmasstransfer.2012.05.008

J-34 F. Sofos, T. Karakasidis, A. Liakopoulos, ‘‘Fluid flow at the nanoscale: How fluid properties deviate from the bulk’’, Nanoscience & Nanotechnology Letters, Vol. 5, No. 4, pp. 457-460, (2013) DOI: 10.1166/nnl.2013.1555

J-35 F. Sofos, T. Karakasidis, A. Liakopoulos, ‘‘Parameters affecting slip length at the nanoscale’’, Journal of Computational & Theoretical Nanoscience, Vol. 10, pp.1-3, (2013) DOI: 10.1166/jctn.2013.2749

J-36 F. Sofos, T.E. Karakasidis, and A. Liakopoulos, “How wall properties control diffusion in grooved nanochannels: a molecular dynamics study”, Heat and Mass Transfer, Vol. 49, Issue 8, pp.1081-1088, (2013) DOI: 10.1007/s00231-013-1152-9. https://link.springer.com/content/pdf/10.1007%2Fs00231-013-1152-9.pdf

J-37 D. Kasiteropoulou, T.E. Karakasidis, A. Liakopoulos, “Mesoscopic simulation of fluid flow in periodically grooved microchannels”, Computers and Fluids, Vol. 74, pp. 91–101, https://doi.org/10.1016/j.compfluid.2013.01.010, (2013).

J-38 A.E. Giannakopoulos, F. Sofos, T.E. Karakasidis, A. Liakopoulos, “A quasi-continuum multi-scale theory for self-diffusion and fluid ordering in nanochannel flows”, Microfluidics Nanofluidcs, Vol. 17, Issue 6, pp. 1011-1023, (2014) DOI: 10.1007/s10404-014-1390-2 https://link.springer.com/content/pdf/10.1007%2Fs10404-014-1390-2.pdf

J-39 A. Charakopoulos, T.E. Karakasidis, P. Papanicolaou, A Liakopoulos, “The application of complex network time series analysis in turbulent heated jets”, Chaos, 24(2):024408, (2014) DOI:10.1063/1.4875040

J-40 A. Charakopoulos, T.E. Karakasidis, P. Papanicolaou, A Liakopoulos, "Non-linear time series analysis and clustering for jet axis identification in vertical turbulent heated jets", Physical Review E 89, 032913, (2014) DOI:10.1103/PhysRevE.89.032913

J-41 F. Sofos, T. E. Karakasidis, A. Liakopoulos, "Fluid structure and system dynamics in nanodevices for water desalination", Desalination and Water Treatment Journal, Volume 57, Issue 25, pp 11561-11571, (2015) http://dx.doi.org/10.1080/19443994.2015.1049966

J-42 A.K. Charakopoulos, T.E. Karakasidis, A. Liakopoulos, "Spatiotemporal Analysis of Seawatch Buoy Meteorological Observations", Environmental Processes, Volume 2, Supplement 1, pp 23–39, (2015). DOI:10.1007/s40710-015-0088-0. https://link.springer.com/content/pdf/10.1007%2Fs40710-015-0088-0.pdf

J-43 A. Fragkou, T.E. Karakasidis, I. Sarris, A. Liakopoulos, "Spatiotemporal Time Series Analysis Methods for the Study of Turbulent Magnetohydrodynamic Channel Flows", Environmental Processes, Volume 2, Supplement 1, pp 141–158, (2015). DOI: 10.1007/s40710-015-0095-1. https://link.springer.com/content/pdf/10.1007%2Fs40710-015-0095-1.pdf

J-44 F. Sofos, T. E. Karakasidis, A.E. Giannakopoulos, A. Liakopoulos, "Molecular dynamics simulation on flows in nano-ribbed and nano-grooved channels", Heat Mass Transfer, Vol. 52, Issue 1, pp 153–162, (2015). DOI: 10.1007/S00231-015-1601-8. https://link.springer.com/content/pdf/10.1007%2Fs00231-015-1601-8.pdf

J-45 A. Liakopoulos, F. Sofos, T. E. Karakasidis "Friction factor in nanochannel flows", Microfluidics Nanofluidics, Vol. 20, Issue 1, pp. 1-7, (2016). DOI: 10.1007/s10404-015-1699-5.

J-46 D. Kasiteropoulou, T. E. Karakasidis, A. Liakopoulos, "Study of fluid flow in grooved micro and nano-channels via dissipative particle dynamic: a tool for desalination membrane design", Desalination and Water Treatment, Taylor & Francis, Vol. 57, Issue 25, pp. 11675-11684, (2016). http://dx.doi.org/10.1080/19443994.2016.1141118 .

J-47 Kasiteropoulou D., N. Michalolias, E. Keramaris, A. Liakopoulos, "Numerical modelling and analysis of turbulent flow in an open channel with submerged vegetation", Environmental Processes Journal, pp.1-15, (2017). DOI: 10.1007/s40710-017-0235-x.

J-48 Keramaris E., Kasiteropoulou D., Liakopoulos A., Michalolias N., Pechlivanidis G., "A study of flow in open channels with vegetation: Experiments and numerical models", Special Topics & Reviews in Porous Media, (2017). **DOI: 10.1615/SpecialTopicsRevPorousMedia.2017019692**

J-48 Keramaris E., Kasiteropoulou D., Liakopoulos A., Michalolias N., Pechlivanidis G., "A study of flow in open channels with vegetation: Experiments and numerical models", Special Topics & Reviews in Porous Media, (2017). DOI: **10.1615/SpecialTopicsRevPorousMedia.2017019692**

J-49 Liakopoulos, A., Sofos, F., T. E. Karakasidis, "Darcy-Weisbach friction factor at the nanoscale: From Atomistic Calculations to Continuum Models", Physics of Fluids, Vol. 29, Issue 5, 052003, (2017). Doi: http://dx.doi.org/10.1063/1.4982667.

J-50 Spetsiotis, D., Sofos, F., Karakasidis, T.E., Kasiteropoulou, D., Liakopoulos, A., "Multi-parameter analysis of water flows in nanochannels", Desalination and Water Treatment 125 (Taylor & Francis), pp. 8-15, (2018).

J-51 Sofos, F., A. Liakopoulos, T.E. Karakasidis, "Particle-based modeling and meshless simulation of flows with Smoothed Particle Hydrodynamics", Global NEST Journal, Vol 21, No 4, pp 513-518 (2019). Doi: https://doi.org/10.30955/gnj.003052.

J-52 Sofos, F., E. Chatzoglou, A. Liakopoulos "An assessment of SPH simulations of sudden expansion/contraction 3-D channel flows", Journal of Computational Particle Mechanics (2021) Doi: https://doi.org/10.1007/s40571-021-00396-z

J-53 Fragkou, A., A. Charakopoulos, T. Karakasidis, A. Liakopoulos "Non-Linear Analysis of River System Dynamics Using Recurrence Quantification Analysis", AppliedMath (2022). Doi: https://doi.org/10.3390/appliedmath2010001

J-54 Chatzoglou, E., A. Liakopoulos and F. Sofos, "Smoothed particle hydrodynamics-based study of 3D confined Microflows", Fluids, Vol. 8, No 5, pp. 137, (2023). Doi:10.3390/fluids8050137.

J-55 Liakopoulos A. and A. Palasis, "On the Composite Velocity Profile in Zero Pressure Gradient Turbulent Boundary Layer: Comparison with DNS Datasets", Fluids, Vol. 8, No 10, pp. 260, (2023). Doi: https://doi.org/10.3390/fluids8100260.

J-56 Liakopoulos A. and A. Palasis, "Turbulent Channel Flow: Direct Numerical Simulation-Data-Driven Modeling", Fluids, Vol. 9, No 3, pp. 62, (2024). Doi: https://doi.org/10.3390/fluids9030062.

J-57 Sofos, F., G. Sofiadis, E. Chatzoglou, A. Palasis, T. E. Karakasidis, and A. Liakopoulos, "From Sparse to Dense Representations in Open Channel Flow Images with Convolutional Neural Networks", Inventions, Vol. 9, No 2, pp. 27, (2024). Doi: https://doi.org/10.3390/inventions9020027.

J-58 Sofiadis, G., A. Liakopoulos, A. Palasis and F. Sofos, "Turbulent micropolar open channel flow", Fluids, 9(9), 202, (2024).

J-59 Chatzoglou E. and A. Liakopoulos, "Turbulent Flow Through Sluice Gate and Weir Using Smoothed Particle Hydrodynamics: Evaluation of Turbulence Models, Boundary Conditions, and 3D Effects", *Water*, 17(2), 152, (2025).

J-60 Palasis A., Liakopoulos A., Sofiadis G. "From Direct Numerical Simulations to Data-Driven Models: Insights into Mean Velocity Profiles and Turbulent Stresses in Channel Flows". *Modelling*, 6(1):18, (2025). https://doi.org/10.3390/modelling6010018

J-61 Palasis, A., G. Sofiadis, F. Sofos, A. Liakopoulos; Turbulent channel flow: A physics-informed neural network approach with embedded parameter

optimization. *Physics of Fluids* 1, 37 (11), (2025). Doi: 115109. https://doi.org/10.1063/5.0288957

J-62 Chatzoglou, E., Sofiadis, G., & Liakopoulos, A. (2025). Enhancing smoothed particle hydrodynamics for turbulent flow simulation: implementation of the dynamic Smagorinsky model. *Engineering Applications of Computational Fluid Mechanics*, *19*(1), (2025). Doi: https://doi.org/10.1080/19942060.2025.2591376

PEER-REVIEWED PAPERS IN INTERNATIONAL CONFERENCE PROCEEDINGS

CP-1. C.C. Hsu and A. Liakopoulos: "A Finite Element-Differential Method for a Class of Compressible Laminar Boundary-Layer Flows", in Numerical Methods in Laminar and Turbulent Flow, C. Taylor and B.A. Schrefler, eds., Pineridge Press, Swansea, U.K., 1981, pp. 497-504.

CP-2. C.C. Hsu and A. Liakopoulos: "Nonsimilar Solution of Compressible Laminar Boundary-Layer Flows by a Semi-Discretization Method", in Finite Element Flow Analysis, T. Kawai, ed., University of Tokyo Press, Tokyo, Japan, 1982, pp. 395-401.

CP-3. A. Liakopoulos and C.C. Hsu: "Prediction of Turbulent Boundary-Layer Flows with a k-ε Closure Model by a Semi-Discretization Method", in Recent Advances in Engineering Mechanics and their Impact on Civil Engineering Practice, W. F. Chen and A.D.M. Lewis, eds., ASCE 1983, pp. 1202-1205.

CP-4. A. Liakopoulos and C.C. Hsu: "On a Class of Compressible Laminar Boundary-Layer Flows", 16th International Congress of Theoretical and Applied Mechanics, Lyngby, Denmark, August 19-25, 1984.

CP-5. A. Liakopoulos and D. Brzakovic: "Spline Based Sequential Estimation of Boundaries in Digital Images", Proc. of the 22nd Annual Allerton Conference, University of Illinois, Urbana, Illinois, October 3-5, 1984, pp. 792-793.

CP-6. D. Brzakovic and A. Liakopoulos: “Measurement Models for Sequential Estimation of Boundaries in Digital Images”, Proc. of IASTED International Symposium on Applied Signal Processing and Digital Filtering, Paris, France, June 19-21, 1985, pp. 168-171.

CP-7. D. Brzakovic and A. Liakopoulos: "Estimation Theory Based Segmentation of Texture Images," in Advances in Image Processing and Pattern Recognition, V. Cappellini and R. Marconi, eds., North Holland, Amsterdam, 1986, pp. 234-238.

CP-8. D. Brzakovic and A. Liakopoulos: “Sequential Estimation of Boundaries in Texture Images”, Proc. of Vision Interface '86, Vancouver, Canada, May 27-30, 1986, pp. 366-369.

CP-9. L. Hong, D. Brzakovic and A. Liakopoulos: "Boundary Detection in a Texture-based Vision System," Proc. of IECON '87, Cambridge, Mass., 1987, pp. 676-681.

CP-10. L. Hong, D. Brzakovic and A. Liakopoulos: “Boundary Detection in Digital Images Based on Spline Functions and Estimation Theory”, Proc. of the 26th IEEE Conference on Decision and Control, Los Angeles, Cal., 1987, pp. 1048-1049.

CP-11. A. Liakopoulos: “Pseudospectral Solutions of Separated Flows”, Proc. of the First National Fluid Dynamics Congress (NFDC), Cincinnati, Ohio, July 24-28, 1988, pp. 207-214.

CP-12. A. Liakopoulos: “A Spectral Collocation Solution Algorithm for the Unsteady, Incompressible Navier-Stokes Equations - An Artificial Compressibility Formulation”, Fifth Annual Forum on Unsteady Flow at the ASME Winter Annual Meeting, Chicago, Illinois, November 28-December 2, 1988, pp. 43-46.

CP-13. A. Liakopoulos: “Spectral Methods for Attached and Separated Compressible Boundary-Layer Flows”, Seventh International Conference on Finite Element Methods in Flow Problems, Huntsville, Alabama, April 3-7, 1989, pp. 1440-1445.

CP-14. A. Liakopoulos: “Unsteady Separation at High Reynolds Numbers”, B' Εθνικό Συνέδριο Μηχανικής, Αθήνα, Ιούνιος 1989, pp. 782-789.

CP-15. A. Liakopoulos, P.A. Blythe and P.G. Simpkins: "Convective Flows in Tall Cavities", in Simulation and Numerical Methods in Heat Transfer, HTD - Vol. 157, A. F. Emery, ed., ASME 1990, pp. 81 - 87.

CP-16. A. Liakopoulos, X. Huang and P.A. Blythe: "Buoyancy Driven Motions Due to a Vertical Array of Heat Sources", in Heat Transfer in Electronic Equipment, HDT - Vol. 171, ASME Press, 1991, pp. 63-69.

CP-17. H. Gunes and A. Liakopoulos: "Three-dimensional Convective Cooling in a Vertical Channel with Protruding Heat Sources", in Advances in Electronic Packaging, EEP-vol.4-2, ASME Press, 1993, pp. 755-767.

CP-18. X. Huang and A. Liakopoulos: "Convective Flow and Heat Transfer in Tall Enclosures with Flush-Mounted Heat Sources", in Advances in Electronics Packaging, EEP-vol. 4-2, ASME Press, 1993, pp. 769-778.

CP-19. A. Liakopoulos and G.W. Brown: "Thermocapillary and Natural Convection in a Square Cavity", AMD - vol. 170, in Surfaces-Tension-Driven Flows, ASME Press, 1993, pp. 57-74.

CP-20. A. Pinarbasi and A. Liakopoulos: "Stability Analysis of Interfaces in Two-Layer, Inelastic-Fluid Flows: Applications to Coextrusion Processes", in Transport Phenomena in Non-conventional Manufacturing and Materials Processing, HTD-vol. 259, ASME Press, 1993, pp. 113-125.

CP-21. A. Liakopoulos: "Stability of Interfaces in Coextrusion Processes", NSF Grantees Conference, MIT, Jan. 5-7, 1994, pp. 601-602.

CP-22. A. Pinarbasi and A. Liakopoulos: "Interface Deformation in Coextrusion on Non-Newtonian Melts: Transient and Steady States", in Advances in Computer-Aided Engineering (CAE) of Polymer Processing, ASME Press, pp. 357-374, 1994.

CP-23. R. A. Sahan, H. Gunes, and A. Liakopoulos: "Low-Dimensional Models for Coupled Momentum and Energy Transport Problems", in Cooling and Thermal Design of Electronic Systems, C. H. Amon, ed., HTD-Vol. 319/EEP-Vol. 15, 1995 International Mechanical Engineering Congress, pp. 1-15.

CP-24. M. Watson, A. Liakopoulos, D. Brzakovic, and C. Georgakis: "Wavelet Techniques in the Compression of Process Data", American Control Conference, Seattle WA, pp. 1265-1269, June, 1995.

CP-25. D. Brzakovic, N. Vujovic and A. Liakopoulos: "Model-based Inspection of Texture Web Materials", Proc. of Machine Vision Applications in Industrial Inspection, SPIE-2423, February 1995, pp. 267-276.

CP-26. H. Gunes, R. A. Sahan, and A. Liakopoulos: "Low-Dimensional Representation of Transitional Buoyancy-Driven Flow in a Vertical Channel with Discrete Heaters", Proceedings of the 1995 National Heat Transfer Conference, Vol. 1, A. Ortega and S. P. Mulay, eds., ASME HTD-Vol. 303, ASME Press, pp. 125-137.

CP-27. A. Pinarbasi and A. Liakopoulos: "Heat Transfer Effects on the Stability of Plane Poiseuille Flow", Proceedings of the ASME Fluids Engineering Division, FED-Vol. 234, D. C. Wiggert and F. J. Moody, eds., 1995 International Mechanical Engineering Congress, pp. 287-296.

CP-28. R. A. Sahan, D. C. Albin, N. K. Sahan, and A. Liakopoulos: "Artificial Neural Network-Based Low-Order Dynamical Modeling and Intelligent Control of Transitional Flow Systems", Sixth IEEE Conference on Control Applications, Hartford, CT, 1997.

CP-29. A. Liakopoulos: "Low-Dimensional Models of Environmental Flows", Proceedings of an Intl. Conference, Protection and Restoration of the Environment IV, Xalkidiki, Greece, eds. K. L. Katsifarakis, G. P. Korfiatis, et al., 1998, pp. 241-248.

CP-30. T. E. Karakasidis and A. B. Liakopoulos: "Dynamics of a Lennard-Jones Liquid-Solid revealed by time series analysis" 15th Summer School Conference on "Nonlinear Dynamics: Chaos and Complexity" 19-30 August 2002, Patras Greece.

CP-31. T. E. Karakasidis and A. B. Liakopoulos: "Characteristic scale extraction in continuum and atomistic fluid simulations", Proceedings of International Conference on the Influence of Traditional Mathematics and Mechanics on Modern Science and Technology, Messini, G. Shih and C. Spyropoulos, Eds. Greece, 24-28/5/2004, pp. 147-153.

CP-32. T. E. Karakasidis and A. B. Liakopoulos: "Short-time Dynamical Behavior of Fluids at the atomic Scale", XXI International Congress of Theoretical and Applied Mechanics (organized by IUTAM), Warsaw, Poland, 15–21/8/2004.

CP-33. Laspidou C.S., A. Liakopoulos and V. Vaina: "Mathematical Modeling and Simulation of Primary Productivity in the Constructed Wetland of Carla, Greece", Protection and Restoration of the Environment VIII, Chania, Greece, 3-7 July 2006.

CP-34. F. Sofos, T. Karakasidis and A. Liakopoulos: "Variation of transport properties across nanochannels: a study by non-equilibrium Molecular Dynamics", IUTAM Symposium on Advances in Micro and Nanofluidics, Dresden, Germany, 6-8 September 2007.

CP-35. T. Karakasidis, A. Fragou and A. Liakopoulos: "Nonlinear Analysis of Nestos River Water Level Time Series", Protection and Restoration of the Environment IX (PRE9), Kefalonia, Greece, 29 June- 3 July 2008.

CP-36. Laspidou C.S., V. Vaina and A. Liakopoulos: "A detailed ecosystem model of phosphorus dynamics in the constructed wetland Carla in Central Greece", Protection and Restoration of the Environment IX (PRE9), Kefalonia, Greece, 29 June- 3 July 2008.

CP-37. Loukas, A., K. Kokkinos, L. Vasiliades, and A. Liakopoulos: "The migration of the UTHBAL hydrologic model into OpenMI", Proceedings of iEMSs 2008: International Congress on Environmental Modelling and Software, Integrating Sciences and Information Technology for Environmental Assessment and Decision Making, 4th Biennial Meeting of iEMSs, Barcelona, pp. 1102-1109, July 6-10 2008.

CP-38. Kokkinos, K., P. Sidiropoulos, L. Vasiliades, A. Loukas, N. Mylopoulos, and A. Liakopoulos: "Integrated Modelling of Surface Water and Groundwater through OpenMI: The Case of Lake Karla Watershed", HydroEco 2009 2nd International Multidisciplinary Conference on Hydrology and Ecology, 20-23 April 2009, Vienna, Austria.

CP-39. H. Neveskiotis, K. Tserdani, I.E. Sarris, T.E. Karakasidis, A. Liakopoulos: "3-D Simulations of Flows in the Reconstituted Lake Karla, Thessaly, Greece", 6th International Symposium on Environmental Hydraulics, June 23-25, Athens, 2010.

CP-40. D. Kasiteropoulou, T.E. Karakasidis, A. Liakopoulos: "Dissipative Particle Dynamics Simulation of Flow in Periodically Grooved Three-Dimensional Nano-channels", 4th IC-SCCE, July 7-10, Athens, 2010.

CP-41. D. Kasiteropoulou, T. Karakasidis, and A. Liakopoulos, "Microfluidics Simulations in Periodically Grooved Channels using Dissipative Particle Dynamics", 2nd European Conference on Microfluidics, Toulouse, December 2010.

CP-42. F. Sofos, T. Karakasidis, and A. Liakopoulos, "Fluid properties in rough-wall nanochannels, 2nd European Conference on Microfluidics", 2nd European Conference on Microfluidics, Toulouse, December 2010.

CP-43. F. Sofos, T. Karakasidis, A. Liakopoulos, "Fluid flow at the nanoscale: how fluid properties deviate from the bulk", 8th International Conference on Nanosciences & Nanotechnologies (NN11), Thessaloniki, Greece, July 12-15, 2011.

CP-44. D. Kasiteropoulou, T. Karakasidis, and A. Liakopoulos, "Dissipative Particle Dynamics Simulation of Flow in Periodically Grooved Three-Dimensional Nano- and Micro-channels", 3rd Micro and Nano Flows International Conference (MNF 2011), Thessaloniki, Greece, August 22-24, 2011.

CP-45. F. Sofos, T. Karakasidis, A.E. Giannakopoulos, A. Liakopoulos, "Transport properties of fluids in confined nanochannels: bridging nano to macro", 3rd Micro and Nano Flows Conference (MNF2011), Thessaloniki, Greece, August 22-24, 2011.

CP-46. D. Kalogianni, I.E. Sarris, A. Liakopoulos, "An OpenFoam based distributed model of water motion and water quality for the reconstituted lake Karla, Thessaly, Greece", 4th International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE), Mykonos, Greece, June 24-28, 2013.

CP-47. F. Sofos, T.E. Karakasidis and A. Liakopoulos "Understanding the structure of fluid flows in nanodevices through molecular dynamics simulations", 12th International Conference on Protection and Restoration of the Environment, Skiathos island, Greece, June 29 to July 3, 2014.

CP-48. D. Kasiteropoulou, T.E. Karakasidis and A. Liakopoulos, "Roughness effect on flows in micro and nano-channels", 12th International Conference on Protection and Restoration of the Environment, Skiathos island, Greece, June 29 to July 3, 2014.

CP-49. A.D. Fragkou, T.E. Karakasidis, I.E. Sarris, A. Liakopoulos, "Spatiotemporal correlations in a turbulent Hartmann flow", 12th International Conference on Protection and Restoration of the Environment, Skiathos island, Greece, June 29 to July 3, 2014.

CP-50. F. Sofos, T. E. Karakasidis and A. Liakopoulos "The impact of slip on nanochannel friction factor", 8th GRACM International Congress on Computational Mechanics, Volos, July 12-15, 2015.

CP-51. D. Kasiteropoulou, T. Karakasidis, and A. Liakopoulos "Particle based simulation of fluid flow in periodically grooved channels", European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS) Congress, Crete Island, Greece, June 5-10, 2016.

CP-52. Keramaris E., Pechlivanidis G., Kasiteropoulou D., Michalolias N., Liakopoulos A., "Experimental and Numerical Study of Turbulent Flow in Open Channels with Imprermeable and Porous Bed", EWaS2, International Conference «Efficient & Sustainable Water Systems Management toward Worth Living Development», Chania, Greece, June 1-4, 2016.

CP-53. Michalolias N., Keramaris E., Kasiteropoulou D., Liakopoulos A., Pechlivanidis G., "Experiments and Numerical Analysis of Flow in an Open Channel with Gravel Bed", EWaS3, International Conference "Insights on the Water-Energy-Food Nexus", Lefkada Island, Greece, 27-30 June 2018.

CP-54. Liakopoulos A., Sofos F., Karakasidis T. E. "Modelling Environmental Flows with Lagrangian Particle Mesh-free Methods", Protection and Restoration of the Environment XIV, Thessaloniki, Greece, July 3-6, 2018.

CP-55. D. Spetsiotis, F. Sofos, T.E. Karakasidis, A. Liakopoulos "Nanoscale flows for water purification applications, 3rd Efficient Water Systems Conference, Lefkada, Greece, June 2018

CP-56 A. Papazisis, D. Kasiteropoulou, A. Liakopoulos "Wake Interference Between Two Wind Turbines for Wind Farm Layout Optimization", Protection and Restoration of the Environment XV, Greece, 2020.

CP-57 Chatzoglou, E., Sofos, F., Liakopoulos, A., "SPH Based Study of Confined Microflows Characterized by Abrupt Changes in Cross-Sectional Area", VII International Conference on Particle-Based Methods, Hamburg, Germany, 2021.

CP-58 Chatzoglou, E., Liakopoulos, A. "Hydraulic jump simulation via Smoothed Particle Hydrodynamics: a critical review", 39th IAHR World Congress, Granada, Spain, (2022), accepted for publication.

CP-59 Chatzoglou, E., Liakopoulos, A. "Simulation of open channel flow control by Smoothed Particle Hydrodynamics", Protection and Restoration of the Environment XVI (2022), accepted for publication.

CP-60 Chatzoglou E. and A. Liakopoulos, "Flow regimes in sluice gate-weir system: 3D SPH-based model validations", 17th SPHeric International Workshop, Rhodes, Greece, June 27-29, 2023.

CP-61 Sofos, F., Sofiadis, G., and Liakopoulos A., " Refining Flow Structures with Deep Learning and Super Resolution Methods", Proceedings of the º3th Hellenic Conference on Artificial Intelligence, 1-6, (2024).

CP-62 Chatzoglou E. and A. Liakopoulos, "Smoothed Particle Hydrodynamics Simulation of 3D Open Channel Flow Over Vegetated Bed", 19th SPHeric World Conference, Barcelona, Spain, June 17-19, 2025.

PEER-REVIEWED PUBLICATIONS IN NATIONAL CONFERENCE PROCEEDINGS (in greek)

ΕΣ-1. Κανακούδης Β., Δ. Τολίκας, Α. Λιακόπουλος, "Διαρροές και Θραύσεις στα Δίκτυα Ύδρευσης", Πρακτικά 8ου Πανελλήνιου Συνεδρίου Ελληνικής Υδροτεχνικής Ένωσης, Επιμέλεια Έκδοσης Γ. Χριστοδούλου, Α. Στάμου, Αικ. Νάνου, Αθήνα 2000, pp. 51-58.

ΕΣ-2. Φαφούτης Χ., Ν. Μυλόπουλος, Α. Λιακόπουλος, "Παράμετροι Διαχείρισης της Ζήτησης στον Τομέα της Ύδρευσης στη Θεσσαλία", 9ο Πανελλήνιο Συνέδριο Ελληνικής Υδροτεχνικής Ένωσης, Θεσσαλονίκη 2002, pp. 277-284.

ΕΣ-3. Karakasidis T.E. and A. B. Liakopoulos, "Revealing short-time atomic dynamics in fluids: linear and non-linear methods", 7th National Congress on Mechanics, Chania, Crete, Greece, 24-26/6/2004, pp.77-82.

ΕΣ-4. Φαφούτης Χ., Α. Μεντές, Ν. Μυλόπουλος, Α. Λιακόπουλος, "Διερεύνηση και Συσχέτιση Παραμέτρων Διαχείρισης της Ζήτησης Νερού σε Θεσσαλονίκη και Βόλο", 5ο Εθνικό Συνέδριο της Ελληνικής Επιτροπής Διαχείρισης Υδατικών Πόρων (ΕΕΔΥΠ), Επιμέλεια έκδοσης Β.Α. Τσιχριντζής, Κ. Μπέλλος, Γ. Τσακίρης, 6-9 Απριλίου 2005, Ξάνθη, pp. 381-388.

ΕΣ-5. Λασπίδου Χ.Σ., Α. Τσερδάνη και Α. Λιακόπουλος, "Επίδραση του λόγου συγκεντρώσεων (TKN/BODL) στη διεργασία προ-απονιτροποίησης σε ΜΕΥΑ" Συνέδριο Ελληνικής Επιτροπής Διαχείρισης Υδατικών Πόρων (ΕΕΔΥΠ), Χανιά, 14-16 Ιουνίου 2007.

ΕΣ-6. Τσερδάνη Α., Ι. Σαρρής, Θ. Καρακασίδης, Α. Λιακόπουλος, "Εφαρμογή μεθόδων υπολογιστικής ρευστομηχανικής σε περιβαλλοντικές εφαρμογές: η περίπτωση της λίμνης Κάρλας", Κοινό Συνέδριο Ελληνικής Υδροτεχνικής Ένωσης (ΕΥΕ) και Ελληνικής Επιτροπής Διαχείρισης Υδατικών Πόρων (ΕΕΔΥΠ), Βόλος 27-30 Μαΐου 2009.

ΕΣ-7. Θ. Καρακασίδης, Φράγκου Α., Λιακόπουλος Α., "Ανάλυση γραφημάτων επαναφοράς χρονοσειρών της στάθμης του ποταμού Νέστου", Κοινό Συνέδριο Ελληνικής Υδροτεχνικής Ένωσης (ΕΥΕ)-Ελληνικής Επιτροπής Διαχείρισης Υδατικών Πόρων (ΕΕΔΥΠ), Βόλος 27-30 Μαΐου 2009.

ΕΣ-8. Ν. Μιχαλόλιας, Δ. Κασιτεροπούλου, Ε. Κεραμάρης, Α. Λιακόπουλος, "Υπολογιστική προσομοίωση σε ανοικτό αγωγό με βλάστηση", 3ο Κοινό Συνέδριο ΕΥΕ, ΕΕΔΥΠ, ΕΥΣ, «Ολοκληρωμένη Διαχείριση Υδατικών Πόρων στη Νέα Εποχή», 10-12 Δεκεμβρίου 2015, Αθήνα, pp.385-294.

ΕΣ-9. Ι. Καράνης, Ι. Θανόπουλος, Ε. Κεραμάρης, Α. Λιακόπουλος, "Σχεδιασμός μικρού υδροηλεκτρικού έργου στον ποταμό Πηνειό", 3ο Κοινό Συνέδριο ΕΥΕ, ΕΕΔΥΠ, ΕΥΣ, «Ολοκληρωμένη Διαχείριση Υδατικών Πόρων στη Νέα Εποχή», 10-12 Δεκεμβρίου 2015, Αθήνα, pp. 427-434.

ΕΣ-10. Παλάσης, Α., Λιακόπουλος, Α., "ΕΠΑΝΕΞΕΤΑΣΗ ΤΟΥ ΠΡΟΦΙΛ ΤΑΧΥΤΗΤΑΣ ΤΥΡΒΩΔΟΥΣ ΟΡΙΑΚΟΥ ΣΤΡΩΜΑΤΟΣ: ΠΡΟΣΟΜΟΙΩΣΕΙΣ DNS ΚΑΙ ΜΟΝΤΕΛΟΠΟΙΗΣΗ", *15ο* Πανελλήνιο Συνέδριο Ελληνικής Υδροτεχνικής Ένωσης, Θεσσαλονίκη, 2022.

ΕΣ-11. Χατζόγλου, Ε., Λιακόπουλος, Α., " Η ΜΕΘΟΔΟΣ SPH ΣΤΗΝ ΥΔΡΑΥΛΙΚΗ ΑΝΟΙΚΤΩΝ ΑΓΩΓΩΝ: ΔΥΟ ΠΡΟΒΛΗΜΑΤΑ ΑΝΑΦΟΡΑΣ ΚΑΙ ΑΠΟΤΙΜΗΣΗ ΤΗΣ ΜΕΘΟΔΟΥ", *15ο* Πανελλήνιο Συνέδριο Ελληνικής Υδροτεχνικής Ένωσης, Θεσσαλονίκη, 2022.

PUBLICATIONS IN NATIONAL CONFERENCE PROCEEDINGS (WITHOUT REVIEW in greek)

ΕΣΧΚ-1 Θ. Καρακασίδης, Φ. Σοφός, Δ. Κασιτεροπούλου, Α. Λιακόπουλος, «Υπολογισμός Ιδιοτήτων Μεταφοράς με τη χρήση Μοριακής Δυναμικής», ΡΟΗ 2006, Πάτρα, Νοέμβριος 2006.

ΕΣΧΚ-2 Δ. Κασιτεροπούλου, Φ. Σοφός, Θ. Καρακασίδης, Α. Λιακόπουλος, «Μοντελοποίηση πολλαπλής κλίμακας σε κανάλια με περιοδικές προεξοχές», ΡΟΗ 2008, Κοζάνη, Νοέμβριος 2008.

ΕΣΧΚ-3 Ι. Σαρρής, Θ. Καρακασίδης, Α. Λιακόπουλος, «Αριθμητική προσομοίωση της τυρβώδους ροής σε λόφο με τη μέθοδο των μεγάλων δινών», ΡΟΗ 2008, Κοζάνη, Νοέμβριος 2008.

ΕΣΧΚ-4 Θ. Καρακασίδης, Θ. Φράγκου, Ι. Σαρρής, Α. Λιακόπουλος, «Εφαρμογή των γραφημάτων επαναφοράς σε χρονοσειρές τυρβώδους ροής σε κανάλι», ΡΟΗ 2008, Κοζάνη, Νοέμβριος 2008.

ΕΣΧΚ-5 Α.Δ.Φραγκου, Θ.Ε. Καρακασίδης, Ι.Ε. Σαρρής και Α. Λιακόπουλος, "Μελέτη της επίδρασης του μαγνητικού πεδίου σε τυρβώδη ροή μέσω ανάλυσης χρονοσειρών ταχυτήτων", ΡΟΗ 2012, 8ο Πανελλήνιο Συνέδριο «Φαινόμενα Ροής Ρευστών», Βόλος, 16-17 Νοεμβρίου 2012.

ΕΣΧΚ-6 Ε. Κεραμάρης, Γ. Πεχλιβανίδης, Α. Λιακόπουλος, "Ερευνητικές Δραστηριότητες των Τμημάτων Πολιτικών Μηχανικών Τ.Ε. του Αλεξάνδρειου Τεχνολογικού Ιδρύματος Θεσσαλονίκης και του Τμήματος Πολιτικών Μηχανικών του Πανεπιστημίου Θεσσαλίας", 9ο Πανελλήνιο Συνέδριο «Φαινόμενα Ροής Ρευστών» σελ. 596-606, Αθήνα, Νοέμβριος 2014.

ΕΣΧΚ-7 Ε. Κεραμάρης, Α. Λιακόπουλος, Γ. Πεχλιβανίδης, Δ. Κασιτεροπούλου, Ν. Μιχαλόλιας, "Μελέτη τυρβώδους ροής σε ανοικτό αγωγό με τεχνητή βλάστηση", 10ο Πανελλήνιο Συνέδριο «Φαινόμενα Ροής Ρευστών», Πάτρα, Δεκέμβριος 2016.

ΕΣΧΚ-8 Φ. Σοφός, Α. Λιακόπουλος, Θ. Καρακασίδης, "Μελέτη ροϊκών φαινομένων στη νανοκλίμακα-Σύνδεση με τη μακροκλίμακα", 10ο Πανελλήνιο Συνέδριο «Φαινόμενα Ροής Ρευστών», Πάτρα, Δεκέμβριος 2016.

ΕΣΧΚ-9 Α. Παλάσης, Α. Λιακόπουλος και Φ. Σοφός, "Η επίδραση του αριθμού Reynolds στη στατιστική συμπεριφορά τυρβώδους οριακού στρώματος", 12ο Πανελλήνιο Συνέδριο Φαινόμενα Ροής Ρευστών, Θεσσαλονίκη, Απρίλιος 2024.

ΕΣΧΚ-10 Γ. Σοφιάδης, Ι.Ε Σαρρής και Α. Λιακόπουλος, "Ελικοειδής δομή στις τυρβώδεις μικροπολικές ροές", 12ο Πανελλήνιο Συνέδριο Φαινόμενα Ροής Ρευστών, Θεσσαλονίκη, Απρίλιος 2024.

CONFERENCE PROCEEDINGS ABSTRACTS (published as collections of abstracts)

A-1. A. Liakopoulos: “Computation of Transonic Turbulent Boundary Layers by a Semi discrete Galerkin Method”, SIAM Meeting, Seattle, Washington, July 16-20, 1984.

A-2. Y.W. Kim, D.C. Hong, A. Liakopoulos, P. Bashus, and D. Brzakovic: “1/f Noise in Thin Wire Oscillation Experiment”, presented at the 63rd Statistical Mechanics Meeting, Rutgers University, New Brunswick, New Jersey, May 9-11, 1990.

A-3. Y.W. Kim, D.C. Hong, A. Liakopoulos, P. Bashus and D. Brzakovic: “Wavelet Decomposition of 1/f Patterns”, Bull. Am. Phys. Soc. Vol. 35, No. 3, 1990, p. 445.

A-4. A. Liakopoulos and F. Alfitri: “Subcritical Instability and Resonant Heat Transfer in Flow Through a Confined Array of Rectangular Cylinders”, presented at the XI US National Congress of Applied Mechanics, Tucson, Arizona, May 21-25, 1990.

A-5. P.G. Simpkins, A. Liakopoulos and P.A. Blythe: “Thermally Driven Flows in Tall Cavities”, Bull. Am. Phys. Soc. Vol. 35, No. 10, 1990, p. 2273.

A-6. A. Liakopoulos, T.- H. Huang: “Wavelet-Galerkin Methods for Computational Fluid Dynamics”, Bull. Am. Phys. Soc. Vol. 35, No. 10, 1990, p. 2337.

A-7. A. Liakopoulos, P.A. Blythe, and P.G. Simpkins: “Spontaneous and Forced Periodic Convective Structures in Tall Cavities”, Bull. Am. Phys. Soc. Vol. 36, No. 10, 1991, p. 2713.

A-8. P.G. Simpkins, J. Davis, P.A. Blythe, and A. Liakopoulos: “Natural Convection in a Tall Air - Filled Cavity: Eddy Structure”, Bull. Am. Phys. Soc. Vol. 36, No. 10, 1991, p. 2713.

A-9. P.G. Simpkins, P.A. Blythe, and A. Liakopoulos: “Eddy Structures of Convective Flows”, Bull. Am. Phys. Soc. Vol. 38, No. 12, 1993, p. 2291.

A-10. P.G. Simpkins and A. Liakopoulos: “Eddy Structures in a Slot with Periodic Heating”, Heat Transfer Gallery, Journal of Heat Transfer, vol. 119, 1997, p. 201.

A-11. M. Watson, D. Brzakovic, and A. Liakopoulos: “Wavelet and Vector Quantization Techniques in Data Compression”, 1995 AIChE Meeting, Miami Beach, FL.

A-12. A. Liakopoulos and P. A. Blythe: "Low-Dimensional Dynamical Models of Transitional Convective Flows", *Bulletin of the American Physical Society*, Vol. 40, No. 12, p. 1955, 1995.

A-13. K. Cipolla, A. Liakopoulos, and D. O. Rockwell: "Quantitative Imaging in proper Orthogonal Decomposition of Flow Past a Delta Wing", 49th APS Fluid Dynamics Meeting, Syracuse, NY, November 1996.

A-14. A. Liakopoulos: "Structure and Dynamics of Transitional Convective flows", Thirteenth U. S. National Congress of Applied Mechanics, Gainesville, FL, June 21-26, 1998.

A-15. Α. Λιακόπουλος, Θ. Καρακασίδης, "Προσομοίωση Ροών/Ρευστών με μη Συνήθεις Μεθόδους: Συνεχής Περιγραφή με μαθηματικά ομοιώματα Χαμηλής Τάξης και Ατομική Περιγραφή με Μοριακή Δυναμική", *2η Ημερίδα, Ερευνητικές Δραστηριότητες στα Φαινόμενα Ροής Ρευστών στην Ελλάδα, Βόλος 22/5/2000.*

A-16. T. Karakasidis, N. Cholevas, A. Liakopoulos "Performance analysis of parallel molecular dynamics simulation of Lennard-Jones liquids on a small Beowulf cluster" *Conference on Computational Physics CCP2001, 5-8/9/2001 Aachen, Germany.*

A-17. T. Karakasidis, N. Cholevas, A. Liakopoulos "Parallel molecular dynamics simulation of Lennard-Jones liquids on a small Beowulf cluster", *International Conference on Computational Methods in Sciences and Engineering* 2003, 12-16/9/2003, Kastoria, Greece.

A-18. A. Liakopoulos, T. Karakasidis: "Two-regime power-law behaviour in a Lennard-Jones fluid", 57th Annual Meeting of the APS Division of Fluid Dynamics, November 21-23, 2004, Seattle, USA.

A-19. C. Delouis, G. Vlachos, P. Papanicolaou, A. Liakopoulos: "Assessment of flow regimes in a hydraulic jump by two-strip electrodes", Electrochemical Flow Measurements and Microfluidics, 1-3/7/2004, Poitiers, France.

A-20. T.E. Karakasidis, G. Palamitzoglou, P. Papanicolaou, A. Liakopoulos: "Title Temperature fluctuations in a horizontal round heated jet: a look through time series

analysis", International Workshop Towards the Future of Complex Dynamic, 30/5-01/06/2005, Dresden, Germany.

A-21. T.E. Karakasidis, A. Fragkou, A. Liakopoulos, "Binary Lennard-Jones Fluids: A look through time series analysis", Meeting of the American Physical Society, Baltimore, 13-17 March 2006.

A-22. T.E. Karakasidis, A. Fragkou and A. Liakopoulos, "Nonlinear methods for environmental time-series analysis and forecasting", First International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE), Skiathos, Greece, June 24 -28, 2007.

A-23. D. Kasiteropoulou, A. Liakopoulos, T. Karakasidis, "Friction laws for planar channels with idealized periodic roughness elements", 60th Annual Meeting of the Divison of Fluid Dynamics, APS, Salt Lake City, Utah, USA, November 18–20, 2007.

A-24. F. Sofos, T. Karakasidis, and A. Liakopoulos, "Non-Equilibrium Molecular Dynamics Simulations of Channel Flows", Bulletin of the APS 52 (17), 2007.

A-25. T.E. Karakasidis, A. Fragkou and A. Liakopoulos, "Detecting system state transitions in environmental time-series using nonlinear time series analysis", International Symposium on Nonlinear Theory and its Applications, Krakow, Poland, September 5-8, 2010.

A-26. C. Fafoutis, N. Mylopoulos, D. Vagiona, A. Liakopoulos, "Water Pricing and Public Participation in Water Resources Management: Towards the Implementation of the EU Water Framework Directive", International Conference on Protection and Restoration of the Environment VIII, Chania-Crete, Greece, July 3-7, 2006.

A-27. D. Kasiteropoulou, T. Karakasidis, and A. Liakopoulos, "Investigation of Parameters Affecting Planar Nanochannel Flows by Dissipative Particle Dynamics", 7th International Conference on Nanosciences and Nanotechnologies, Halkidiki, Greece, July 2010.

A-28. F. Sofos, T.E. Karakasidis and A. Liakopoulos, "Fluid flow at the nanoscale: how fluid properties deviate from the bulk", 8th International Conference on Nanosciences & Nanotechnologies (NN11), Thessaloniki, Greece, July 2011.

A-29. Loukas, A., N. Mylopoulos, K. Kokkinos, P. Sidiropoulos, L. Vasiliades and A. Liakopoulos, ‘‘The effect of spatial discretization in integrated modeling of surface and groundwater hydrology through OpenMI”, HYDROPREDICT2008 International Interdisciplinary Conference, Prague, 15-18 September 2008.

A-30. F. Sofos, T. Karakasidis, A. Liakopoulos, “Fluid/wall interactions in a nanofluidic system: the interface region”, 9th International Conference on Nanosciences & Nanotechnologies (NN12), Thessaloniki, Greece, July 2012.

A-31. D. Kasiteropoulou, T. Karakasidis, and A. Liakopoulos, “Parameters Affecting Planar Grooved Nanochannel Flows via Dissipative Particle Dynamics Simulations”, 9th International Conference on Nanosciences & Nanotechnologies, Thessaloniki, Greece, July 2012.

A-32. A. Liakopoulos, “Some issues in particle-based simulations of blood flow”, Συνέδριο “Αγγειακή Ροή και Μηχανική”, Ιωνικό Κέντρο, Αθήνα, 3 Οκτωβρίου 2015.

Citations

Google Scholar: 2015 (based on 91 publications)

Scopus: 1408 (based on 90 publications)