

CURRICULUM VITAE
GEORGE SERBAN CONSTANTINESCU

OFFICE ADDRESS:

IIHR – Hydrosience and Engineering
The University of Iowa, Iowa City IA 52242
Phone: (319) 384-0630 or (319) 594-2817
e-mail: sconstan@engineering.uiowa.edu

PROFESSIONAL PREPARATION:

Civil Engineering Institute, Bucharest, Romania: Civil & Env. Engrg., M.S., 1992
The University of Iowa: Civil & Environmental Engineering, Ph.D., 1997

APPOINTMENTS:

2024-2024 Visiting Professor, St. Venant Laboratory, Ecole Ponts Paris Tech, Paris, France
(3 months)
2023-2023 Visiting Professor, INSA & INRAE Lyon, France (3 months)
2022-2022 Visiting Professor, Institute of Freshwater Ecology and Inland Fisheries Berlin,
Germany (3 months)
2021-2021 Visiting Professor, ETH Zurich, Institute for hydraulics, hydrology and glaciology
(VAW, Host: Prof. R. Boes), Switzerland (8 months)
2017-2017 Visiting Professor, Institute of Freshwater Ecology and Inland Fisheries Berlin,
Germany (3 months)
2017-2017 Visiting Professor, Institute of Freshwater Ecology and Inland Fisheries Berlin,
Germany (3 months)
2016-2016 Visiting Professor, Technical University Graz, Austria (3 months)
2015-present Professor, Dept. Civil and Environmental Engineering, University of Iowa
2015-2015 Visiting Professor, EPFL Lausanne, Physics of aquatic systems laboratory (Host: Prof. J
Wuest), Switzerland (8 months)
2009-2015: Associate Professor, Dept. Civil and Environmental Engineering, University of Iowa.
2012-2012: Visiting Professor, Institute of Freshwater Ecology and Inland Fisheries Berlin,
Germany (2 months)
2010-2010: Visiting Professor, ETH Zurich, Institute for hydraulics, hydrology and glaciology
(VAW, Host: Prof. W Hager & R. Boes), Switzerland (8 months)
2004-2009: Assistant Professor, Dept. Civil and Environmental Engineering, University of Iowa.
2000-2003: Research Engineer, ASCI-Dept. of Energy Center for Integrated Turbulence Simulations
(CITS) & Center for Turbulence Research, Stanford University.
1999-2000: Postdoctoral Associate, Center for Turbulence Research, Stanford University.
1998-1999: Postdoctoral Associate, Department of Mechanical and Aerospace Engineering, Arizona
State University.

HONORS:

-2001- **Best Technical Note Award** in the ASCE Journal of Hydraulic Engineering,
awarded by the Env. and Water Resources Institute (EWRI)
-2011- **Hilgard Award** for Best Paper in the ASCE Journal of Hydraulic Engineering,
awarded by the Env. and Water Resources Institute (EWRI)
-2013 - **Arthur Ippen Award** awarded by the International Association of Hydraulic
Research (IAHR). This is the top international award in the area of hydraulics for
researchers under 45 years. It is awarded to one individual every two years.

CURRENT PRINCIPAL FIELDS OF INTEREST:

My main areas of research are:

- 1) **Flood propagation and mitigation of geological hazards associated with floods and dam breaks:** development of numerical tools for flood propagation in natural streams and dam break problems using fully 3D, non-hydrostatic RANS models with deformable free surface capabilities, numerical simulation of floods in watersheds using 1D Saint-Venant solvers, hysteresis effects associated with flood wave propagation in river channels, mudflows and dam break problems involving non-Newtonian fluids.
- 2) **Eco-hydraulics:** flow in vegetated channels, restoration of ecological habitats in rivers, fish passage studies for several hydropower dams in the Pacific Northwest, temperature stratification studies in the forebays of hydropower dams related to optimizing operation of dams to reduce fish kill, near-bed flow, turbulence and hydrodynamics of biologically-conditioned labile river channels populated by benthic organisms, flow and hydrodynamics and local scour around isolated freshwater mussels and mussel beds.
- 3) **Stratified flows:** study of the physics of intrusion gravity currents and bottom-propagating gravity currents propagating over smooth flat and inclined surfaces and over surfaces containing large-scale roughness elements (ribs, dunes, cyclic steps), interaction of gravity currents with pipes situated at or close to the bed (hazards mitigation), dynamics of breaking internal solitary waves, interaction of gravity currents with submerged dams and arrays of fences, study of the ejection of non-buoyant and buoyant miscible contaminants from bottom-river cavities.
- 4) **Lake hydrodynamics and lake ecology:** bio-convection induced by swimming bacteria in stratified high-altitude lakes, wind induced circulation in stratified lakes, generation of gravity-current-like intrusions by diurnal cooling in the near-shore regions of lakes.
- 5) **Flow in porous media & vegetated canopies:** unidirectional and oscillatory flow in channels containing patches of emerged/submerged vegetation and aquatic canopies, gravity currents propagating into a porous medium or in a channel containing a porous layer, radiation driven convective mass exchange in fresh-water systems containing zones with floating vegetation, flow past porous barriers and fences, snow drift implications, flow past porous cylinders.
- 6) **Shallow flows:** shallow mixing layers; investigation of flow hydrodynamics, mixing, stratification effects and erosion mechanisms at lowland and mountain river confluences with concordant and discordant beds; shallow wakes; shallow open channel flow past bedforms.
- 7) **Prediction of flow, sediment transport, and bathymetry changes in open channels with alluvial beds:** prediction of flow, sediment transport and morphological processes in curved bends and river meanders, study of the flow physics using eddy resolving techniques, improvement of sediment pick-up formulas used in RANS based solvers with a movable bed, flow resistance over river beds containing macro structures.
- 8) **Flow, mixing and transport processes around hydraulic structures:** flow and contaminant transport processes at river groynes, flow and transport processes around bridge piers and abutments, optimizing design of hydraulic structures to reduce flood hazard, development of new generalized design guidelines for protection against erosion at bridge abutments, design of water pump intakes.
- 9) **Wind engineering and fluid-structure interactions:** optimization of snow fence design, prediction of the air flow fields around rain gauges, development of new simplified procedures to estimate wind loads on truss and bridge support structures for highway signs, updating AASHTO standard for drag coefficients on traffic signs

- 10) **Rough bed boundary layers with large-scale roughness elements:** spatial development and structure of flow in boundary layers over mussel beds, boundary layers over boulders in open channel flows
- 11) **Other topics:** study of flow disturbances and measurement errors induced by a boat-mounted Acoustic-Doppler Current Profiler in a channel, development of methodology to assess performance of methods used to generate turbulent inflow conditions (synthetic turbulence) in CFD simulations, recognition and characterization of coherent structures in turbulent flows, use of close-range photogrammetry for remote tracking of temporal evolution of snow deposits in the field.

MAIN RESEARCH AREAS BEFORE JOINING THE UNIVERSITY OF IOWA:

- 1) Development and validation of a differential preconditioner operator to be used for multistage artificial-compressibility algorithms in conjunction with multi-grid methods on highly skewed meshes.
- 2) Development of multi-block capability for a general fully 3D non-hydrostatic viscous flow solver using RANS models with near-wall modeling capabilities, investigation of physics of pump-intake flows.
- 3) Development of a Detached Eddy Simulation (DES) module for prediction of massively separated flows at high Reynolds numbers. Investigation of flow physics of massively separated flows (flow past sphere, flow past ellipsoids at angle of attack) using LES and hybrid RANS-LES (e.g., DES) methods.
- 4) Computational aero-acoustics of compressible jets using LES and highly-accurate numerical discretizations (blend of compact Pade schemes and spectral methods) needed to accurately predict the mixing noise radiated by round jets, and the spatio-temporal distribution of acoustic sources.
- 5) Development of a new method to treat the governing equations near the polar axis for finite-differences Navier-Stokes codes written in cylindrical or spherical coordinates.
- 6) Participated in the development and validation of a new massively parallel (MPI) and modular multi-physics finite-volume non-dissipative LES code (CDP) using unstructured meshes that can be used to predict single and multi-phase flows (Lagrangian-Eulerian approach). Implemented a low-Mach-number module for combustion simulation. Performed non-reacting and reacting flow simulations in a combustor of a jet aircraft engine of realistic geometry.

JOURNAL EDITORSHIP:

- Associate Editor, Journal of Hydrology, 2016-present
- Associate Editor, IAHR Journal of Hydraulic Research, 2007-present
- Associate Editor, ASCE Journal of Hydraulic Engineering, 2010-present
- Associate Editor, IAHR Journal of Ecohydraulics, 2015-present
- Editorial Board Member, Environmental Fluid Mechanics journal, 2024-
- Guest Editor, Environmental Fluid Mechanics journal; special issue focusing on Shallow Flows, 2013
- Guest Editor, Journal of Irrigation and Drainage; special issue focusing on CFD, 2022
- Guest Editor, Environmental Fluid Mechanics journal; special issue focusing on Shallow mixing interfaces and flow and mixing at river confluences, 2024

TECHNICAL COMMITTEES

- Chair IAHR Fluvial Hydraulics Committee 2024-2026
- Vice Chair IAHR Fluvial Hydraulics Committee 2022-2024
- Chair, IAHR Fluid Mechanics Committee, 2009-2013
- Chair, ASCE Eco-hydraulics Technical Committee, 2008-2012
- Chair, IAHR Science and Engineering Harmonization Committee, 2014-2017
- Chair, ASCE 'Mass exchange processes around in-stream structures for habitat restoration' Task Committee, 2005-2013
- Member, IAHR Fluvial Hydraulics Committee, 2013-present

- Member, ASCE Computational Hydraulics Technical Committee, 2005-2009
- Member, IAHR Fluid Mechanics Committee, 2005-2015
- Member (NSF-sponsored) Community Surface Dynamics Modeling System, Cyber-informatics and Numerics Working Group, 2009-2016

International PhD committees:

- Opponent to PhD defense of Dr. H. Binns, Civil and Environmental Engineering Department, Technical University Trondheim, Norway, 2010
- Opponent to PhD defense of Dr. Ateek Ur Rehman Civil and Geosciences Engineering Department, Technical University Munchen, Germany, 2019
- Opponent to PhD defense of Dr. Shervin Shahriari, Civil Engineering Department, Technical University Graz, Austria, 2020
- External Examiner, PhD Defense of Dr. Joe Pelmar, Department of Civil Engineering, Auckland University, New Zealand, 2020
- Committee Member, PhD of Yannick Marschall, VAW Laboratory, Department of Civil and Environmental Engineering, ETH Zurich, Switzerland, 2023-
- Committee Member, PhD of Bastien Cerino, INRAE Lyon, France, 2023-
- External Examiner, PhD Defense of Dr. Fei He, University of Western Australia, Department of Civil and Environmental Engineering, Australia, 2023

SCIENTIFIC MEETINGS:

-Organizer and Chair of the 3rd IAHR International Symposium on Shallow Flows, Iowa City, IA, USA, June 2012 (<http://www.iahr.uiowa.edu/shallowflowsconference-2>)

-Organizer and Chair of the 8th International conference on fluvial hydraulics, River Flow 2016, St Louis, Missouri in July 2016 (<http://www.riverflow2016.org>)

-Organizer and Chair of the 11th International symposium of environmental hydraulics, ISEH 2027, Iowa City, IA in June 2027

-Convener of the Open Channel Hydraulics sessions at the *Fifth International Symposium on Environmental Hydraulics*, Tempe, AZ, 2007

-Chair of the Computational Hydraulics Sub-Track at the *Annual ASCE-EWRI Water & Environmental Congress, Tampa, Florida, 2007*

-Co-Chair of the Hydraulics and Waterways Track at the *Annual ASCE-EWRI Water & Environmental Congress, 2009*.

-Co-chair of the “Mechanics of water flow” and “Waterway restoration” sub-tracks for the *XXXIIIrd International Association Hydraulic Research Congress*, Vancouver, Canada, 2009.

- Co-organizer of a session on “Turbulence and Interactions in River Hydraulics” of the 5th European IAHR Congress, Trento, Italy, June 2018

-Member International Scientific Committee:

-Turbine 99-III IAHR/ERCOFTAC Workshop on draft tube flow, Porjus, Sweden, 2005

-Ninth International Symposium on Fluid Control, Measurement and Visualization, FLUCOME 2007, Tallahassee, Florida.

-5th International Symposium on Environmental Hydraulics, Athens, Greece, 2010

-2nd International Mini-Symposium on River Dynamics, Morphodynamics and Ecology, Aquatic Vegetation in Natural Streams: Science and Practice, Duino, Italy, July 2011

- Sixth International Symposium on Environmental Hydraulics, Singapore, 2013

-XXXIVth International Association Hydraulic Research Congress, Chengdu, China, 2013.

-7th International conference on fluvial hydraulics, River Flow 2014, Lausanne, Switzerland, 2014

-9th Symposium on River Coastal and Estuarine Morphodynamics (RCEM 2015), Iquitos, Peru, 2015

- 4th International Symposium of Shallow Flows, Eindhoven, The Netherlands, June 2017
- 9th International conference on fluvial hydraulics, River Flow 2018, Lyon, France, 2018
- 8th International Symposium on Environmental Hydraulics, Notre Dame, USA, June 2018
- XXXVIIIst International Association Hydraulic Research Congress, Panama, 2019
- 10th International conference on fluvial hydraulics, River Flow 2020, Delft, The Netherlands, 2020
- 5th International Symposium of Shallow Flows, Nanjing, China, December 2020
- Advisory board member, 39th IAHR World Congress, Granada, Spain, June 2022
- 11th International conference on fluvial hydraulics, River Flow 2022, Kingston, Ontario, Canada, 2022
- 3rd IAHR Young Professional Congress, Madrid, Spain, November 2022
- IAHR Yalin Memorial Colloquium, Univ Palermo, Italy, January 2023
- XXXIXst International Association Hydraulic Research IAHR Congress, Vienna, 2023
- 1st International Workshop around Hydraulic and Coastal Structures (SHCS), Nanjing, China, September 2023
- 4th AHR Young Professional Congress, November 2023, Lisbon, Portugal
- 12th International conference on fluvial hydraulics, River Flow 2024, Liverpool, UK, 2024
- 10th International Symposium Environmental Hydraulics, Aberdeen, UK, 2024
- 5th AHR Young Professionals Congress, 2024

TEACHING EXPERIENCE:

- ENGR:2510 Fluid Mechanics
- 057:010 Dynamics
- 057:007 Statics
- 053:071 Principles of hydraulics and hydrology
- 053:144 Open Channel Flows and Sediment Transport
- 053:272 Environmental dispersion processes
- 053:195 Introductory flow and transport computations in pipes and channels
- 053:273 Computational hydraulics
- 053:279 Advanced topics in comput. hydraulics and environmental fluid mechanics
- 058:278 Turbulent flows
- 058:284 Water Resources Design

OTHER TEACHING ACTIVITIES:

- Invited lecturer, 6th *Environmental Fluid Mechanics Summer School*, Horw, Switzerland, June 2012
- Co-organizer of a Master Class on ‘Numerical solutions of fluvial processes’, 6th *International conference on fluvial hydraulics: River Flows 2012*, San Jose, Costa Rica
- Short course on ‘Fundamentals of eddy resolving numerical simulations’ taught during my 2010 sabbatical leave at VAW-ETH Zurich
- Short course on “Coherent structures and LES applications in environmental hydraulics” at the XXXIVst *International Association Hydraulic Research Congress*, Chengdu, China, 2013
- Short 2-day course on “LES for hydraulics and environmental fluid mechanics” at the XXXIVst *International Association Hydraulic Research Congress*, The Hague, The Netherlands, 2015
- Short 2-day course on “LES, sediment transport and sediment entrainment mechanisms” presented as part of the SEDITRANS European biannual meeting, held at Universite Catholique de Louvain, Belgium, Dec. 7-9, 2015.
- co-organizer of a Master class on Turbulence and Mixing Phenomena at the 8th *International conference on fluvial hydraulics: River Flows 2016*, Saint Louis, USA, 2016
- Sediment Transport course taught as part of the Master Program in Hydraulic Engineering and Water Resources Management at TU Graz, Austria, 2018

- Numerical Methods in Hydraulics course taught as part of the Master Program in Hydraulic Engineering and Water Resources Management at TU Graz, Austria, 2018
- “Eddy-resolving numerical simulations and coherent structures in hydrodynamics environmental hydraulics” taught during my 2021 sabbatical leave at VAW-ETH Zurich
- co-organizer of a Master class on Computational Modeling of River Processes at the *11th International conference on fluvial hydraulics: River Flows 2022*, Ottawa, Canada, 2022
- online short course ‘Applications of eddy resolving numerical simulations to environmental and eco-hydraulics,’ Hohai University, China, Nov-Dec 2022.
- short course ‘Applications of eddy resolving numerical simulations to environmental hydraulics,’ Ecole des Ponts, Univ. Paris Est, June-July 2024.
- short course ‘Shallow mixing interfaces and flow and mixing at river confluences’, River Flow 2024, Liverpool, UK, September 2024

GRADUATE THESIS ADVISOR/COADVISOR (graduation year is indicated):

12 Ph.D. students

S.K. Ooi (2007, co-chair, topic: high resolution LES simulations of lock release gravity currents)
A. McCoy (2007, chair, topic: LES investigation of flow and mass exchange processes past river groynes)
J. Zeng (2007, chair, topic: development and validation of a fully 3D non-hydrostatic RANS numerical model to predict sediment transport and bed morphology changes in curved open channels with loose bed)
M. Koken (2008, chair, topic: numerical and experimental studies of flow and scour processes around isolated spur dikes in a shallow channel)
Md. Haque (2007, co-chair, topic: prediction of flow and temperature stratification at hydropower bays using steady and unsteady RANS models)
G. Kirkil (2008, chair, topic: LES and DES studies of flow past circular and rectangular bridge piers at different stages of the scouring process, investigation of scale effects)
T. Tokyay (2010, chair, topic: numerical investigation of gravity currents propagating over dunes and rough beds, and interaction of gravity currents with submerged dams using high resolution LES simulations)
H. C. Ho (2010, co-chair, topic: investigation of unsteady and non-uniform flow and sediment transport characteristics at culvert sites)
K. Basnet (2015, chair, topic: flow past porous barriers and porous fences, design of snow fences)
Z. Cheng (2016, chair, topic: shallow mixing layers and river confluences)
D. Horna Munoz (2017, chair, topic: 3D RANS modeling of river floods and dam break problems)
Wu, H (2022, chair, topic: flow and transport processes around freshwater mussels)

K.S. Chang (2006, co-chair, student graduated from Korean Advanced Institute of Science and Technology, KAIST, Korea, topic: LES and DES simulations of flow past bottom cavities and study of ejection of non-buoyant or buoyant contaminants), thesis received Best Thesis Award from the School of Mechanical, Aerospace and Systems Engineering, KAIST, 2007.

6 M.S. students (thesis option):

T. Tokyay (2005, chair, topic: LES of pump intake flows)
M. McConville (2005, co-chair, topic: RANS investigations of flow in the vicinity of hydropower dams)
J. Benson (2007, co-chair, topic: RANS and LES studies of flow past fish passage structures)
C. Choi (2013, chair, topic: numerical simulation of floods using 1D models)
H. Xu (2015, co-chair, topic: prototyping hydroinformatics-based systems for supporting decision making in culvert design and monitoring)
H. W. Tsai (2017, co-chair, topic: development of methodology to support estimation of snow drifting with application to snow fence design)

SUPERVISION OF POSTDOCTORAL ASSOCIATES:

Dr. Ayse Y. Ozan 2010-2012 (gravity currents propagating through a porous medium and a surface vegetation layer, gravity currents over inclined surfaces)

Dr. Jelena Markovic Brancovic 2011-2012 (Fulbright Fellow, gravity currents propagating over cyclic steps)

VISITING SCHOLARS IN MY RESEARCH GROUP:

K.S. Chang (Korean Advanced Institute of Science and Technology, Korea, 14 months), W. Debler (Univ. of Graz, Austria, 6 months), C. Braun (Karlsruhe University, Germany, 6 weeks), B. Hall (Univ. California Santa Barbara, 2 weeks), A. Burks & M. Clark (5 weeks, NSF, Iowa AGEP and Alliance Summer Program), S. Kashyap (University of Ottawa, 6 months), Dr. Y.A. Mohamed (Zagazig Univ., Egypt, 6 months), Prof. Suilang Huang (Nankai Univ., China, 3 months), Dr. Fatima Jahra (Hiroshima University, Japan, 2 months), Dr. Qin Zhao (Xihua Univ., China, 12 months), Prof. J. Schneider (Graz Univ. of Technology, 3 months), Pengwei Wu (Wuhan University, China, 1 year), Chenyu Jiang (Hohai University, China, 2 years), Tommaso Lazzarin (Univ. Padua, Italy, 1 year), Andrea del Gaudio (Univ Federico II, Naples, Italy, 1 year), Yannick Marschall (ETH Zurich, Switzerland, 3 months)

INVITED TALKS/PAPERS AT CONFERENCES, SYMPOSIA AND WORKSHOPS

- Invited Speaker, 12th ERCOFTAC Workshop on Direct and Large Eddy Simulation DLES 12, Madrid, Spain, June 2019.
- Arthur Ippen Lecture, XXXIVst International Association Hydraulic Research Congress, Chengdu, China, 2013.
- Gerhard Jirka Memorial Colloquium, Karlsruhe, Germany June 2011
- Fifth International Symposium on Environmental Hydraulics, Tempe, AZ, 2007
- 7th International Conference on Hydrosience and Engineering, ICHE 2006, Philadelphia, September 2006
- US-China Workshop on Advanced Computational Modeling in Hydrosience and Engineering, Univ. Mississippi, Oxford, Mississippi, September 2005

LIST OF PUBLICATIONS

SUMMARY:

1 book, 2 conference proceedings, 124 journal papers, 170 conference papers

H index:

- Google Scholar: 56**
- Scopus: 47**
- ISI Web of Science: 45**

Books

Rodi, W, **Constantinescu, G.** and Stoesser, T. (2013) "Large Eddy Simulation in hydraulics" IAHR Monograph, CRC Press, Taylor & Francis Group (ISBN-10: 1138000247) 310 pages 10.1201/b15090

Constantinescu, G., Garcia, M. and Hanes, D. (2016) "Proceedings of the 8th International Conference on Fluvial Hydraulics –River Flow 2016", CRC Press, Taylor & Francis Group, ISBN: 978-1-138-02913-2 625 pages

Constantinescu, G., Balachandar, R., Abad, J. and Li., D. (2017) "Identification of coherent structures," chapter 6.14 in Experimental Hydraulics: Methods, Instrumentation, Data Processing and Management, Editors: Muste, M., Aberle, J., Admiral, D., Ettema, R., Garcia, M., Lyn, D., Nikora, V. and Rennie, C., IAHR Monograph, 975 pages, Taylor & Francis, ISBN 9781138027534 - CAT# K25651

CD-ROM Publications

Constantinescu, G. and Fernando, H. (2012) "Proceedings of the 3rd International Symposium on Shallow Flows", Iowa City, IA, USA

Book Reviews

Constantinescu, G. (2020) "Turbulence in Coastal and Civil Engineering," by Mutlu Sumer and David Fuhrman, Advanced Series on Ocean Engineering, Vol. 51, World Scientific Publishing Co. Pte. Ltd., Singapore, 731 pp., Journal Hydraulic Engineering, 146(12), [https://doi.org/10.1061/\(ASCE\)HY.1943-7900.0001828](https://doi.org/10.1061/(ASCE)HY.1943-7900.0001828)

Journal Papers

Forum papers:

1-Wu, W., Altinakar, M.S., Al-Riffai, M, Bergan, N., Bradford, S., Cao, Z, Chen, Q.J., Constantinescu, G., Duan, J et al. (2011) 'Earthen Embankment Breaching,' J. Hydraulic Engineering, 137(12), 1549-1564, 10.1061/(ASCE)HY.1943-7900.0000498

Published or in press:

124- Chang, K.S., Jiang, C., Constantinescu, G. And Jung, Y.K. (2024) Flow and coherent structures generated by a circular array of rigid, emerged cylinders in a shallow channel, *Journal Fluid Mechanics*, 995, A9, doi:10.1017/jfm.2024.560

123-Lazzarin, T., Constantinescu, G., Wu, H. and Viero, D. (2024) Fully developed open channel flow over clusters of freshwater mussels partially buried in a mussel bed, *Water Resources Research*, 60, e2023WR035594, doi.org/10.1029/2023WR035594

122-Constantinescu, G. and Gualtieri, G. (2024) River confluences: a review of recent field and numerical studies, *Environmental Fluid Mechanics*,

121-Del Gaudio, A., Constantinescu, G., di Cristo, C., de Paola, F. and Vacca, A. (2024) Large eddy simulation of power-law fluid dam-break wave impacting against a vertical wall,' *Physical Review Fluids*, 9, 074801, doi/10.1103/PhysRevFluids.9.074801

120- Chang, K. and Constantinescu, G. (2024) Gravity currents generated by surface cooling over an inclined surface, *AGU Geographical Monograph 'Particulate Gravity Currents'*,

119-Del Gaudio, A., La Forgia, G., Constantinescu, G., de Paola, F., di Cristo, C., Iervolino, M., Leopardi, A. and Vacca, A. (2024) Modeling the impact of a dam-break wave on a vertical wall, *Earth Surfaces Processes and Landform*, 49, 2080-2095, 10.1002/esp.5817

118-Yuan, S., Lin, J., Tang, H., Zhu, Y., Ran, Q., Constantinescu, G. and Gualtieri, C. (2024) Near-surface turbulent dissipation at a laboratory-scale confluence: Implications on gas transfer, *Environmental Fluid Mechanics*, doi.org/10.1007/s10652-023-09964-8

117-Koken, M and Constantinescu, G. (2023) Influence of submergence ratio on flow and drag forces generated by a long rectangular array of rigid cylinders at the sidewall of an open channel, *Journal Fluid Mechanics*, 966, A5, doi:10.1017/jfm.2023.427

116-Chang, W.Y. and Constantinescu, G. (2023) Oscillatory flow around a vertical circular cylinder placed in an open channel: coherent structures, sediment entrainment potential and drag forces, *Journal of Fluid Mechanics*, 964, A22, 10.1017/jfm.2023.367

115-Lazzarin, T, Constantinescu, G., Di Micco, L., Wu, H., Lavignani, F, Lo Brutto, M., Termini, D. and Viero, D.P. (2023) Influence of bed roughness on flow and turbulence structure around a partially-buried, isolated freshwater mussel, *Water Resources Research*, 59, e2022WR034151, 10.1029/2022WR034151

114-Jiang, C., Constantinescu, G, Yuan, S and Tang, H. (2023) Flow hydrodynamics, density contrast effects and mixing at the confluence between the Yangtze River and the Poyang Lake channel, *Environmental Fluid Mechanics*, 23(2), 229-257, doi:10.1007/s10652-022-09848-3

113-Sukhodolov, A.N., Shumilova, O.O., Constantinescu, G.S., Lewis, Q. and Rhoads, B.L. (2023) Mixing at river confluences governed by intermodal behavior, *Nature Geoscience*, 16, 89-93, 10.1038/s41561-022-01091-1

112-Wu, H. And Constantinescu, G. (2022) Effect of angle of attack on flow past a partially burrowed, isolated freshwater mussel, *Advances Water Resources*, 168, 104302, doi:10.1016/j.advwatres.2022.104302.

111- Cheng, Z. And Constantinescu, G. (2022) Shallow mixing interfaces between parallel streams of unequal densities, *Journal of Fluid Mechanics*, 945, A2, doi:10.1017/jfm.2022.505

110-Wu, H., Zeng, J. and Constantinescu, G. (2021). A design formula for sizing rock riprap at spill-through abutments in compound channels,' *Journal Hydraulic Engineering*, 147(10), [https://doi.org/10.1061/\(ASCE\)HY.1943-7900.0001919](https://doi.org/10.1061/(ASCE)HY.1943-7900.0001919)

109- Cheng, Z. and Constantinescu, G. (2021) Shallow mixing layers between non-parallel streams in a flat-bed, wide channel, *Journal of Fluid Mechanics*, 916, A41, doi:10.1017/jfm.2021.254

108-Venuleo, S., Pokrajac, D., Tokyay, T., Constantinescu, G., Schleiss, A. and Franca, M. (2021) 'Parametrization and results of SWE for gravity currents are sensitive to the definition of depth,' *Journal Hydraulic Engineering*, 147(5), 10.1061/(ASCE)HY.1943-7900.0001868

107-Shumilova, O. O., Sukhodolov, A. N., Constantinescu, G. S., and MacVicar, B. J. (2021) 'Dynamics of shallow wakes on gravel-bed floodplains: Data set from field experiments,' *Earth Syst. Sci. Data*, 13(4), 1519-1529, 10.5194/essd-13-1519-2021

106- Wu, H., Zeng, J. and Constantinescu, G. (2021). A multiparameter design formula for riprap size selection at wing-wall abutments, *Journal Hydraulic Research*, 59(4), 651-661, DOI: 10.1080/00221686.2020.1818310

105-Koken, M. and Constantinescu, G. (2020) Flow structure inside and around a rectangular array of rigid, emerged cylinders located at the sidewall of an open channel, *Journal of Fluid Mechanics*, 910, A2, doi:10.1017/jfm.2020.900

104-Cheng, Z. and Constantinescu, G. (2020) Near-field and far-field structure of shallow mixing layers, *Journal of Fluid Mechanics*, 904, A21, doi:10.1017/jfm.2020.638

103-Wu, H., Constantinescu, G and Zeng, J. (2020) Flow and entrainment mechanisms around a freshwater mussel aligned with the incoming flow, *Water Resources Research*, 56, e2020WR027983, <https://doi.org/10.1029/2020WR027983>

102-Lewis, Q, Rhoads, B., Sukhodolov, A. and Constantinescu, G. (2020) Advective lateral transport of streamwise momentum controls mixing at small river confluences, *Water Resources Research*, 56(9), e2019WR026817, 10.1029/2019WR026817

101-Ulloa, H.N., Constantinescu, G., Chang, K.S., Horna-Munoz, D., Hames, O. and

- Wuest, A. (2020) ‘Horizontal transport under wind induced resonance in stratified waterbodies’ *Physical Review Fluids*, 5(5), 054503, 10.1103/PhysRevFluids.5.054503
- 100-Chang, W.Y., Constantinescu, G. And Tsai, W.F. (2020) ‘Effect of array submergence on flow and coherent structures through and around a circular array of rigid vertical cylinders’ *Physics of Fluids*, 32, 035110 (2020), doi:10.1063/1.5138604
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