CURRICULUM VITAE
GEORGE SERBAN CONSTANTINESCU

PROFESSIONAL PREPARATION:

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

APPOINTMENTS:

2015-2015	Visiting Professor, Politecnico di Torino, Turin, Italy (3 months)
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 Switzerland (8 months)
2019-2019	Visiting Professor, Institute of Freshwater Ecology and Inland Fisheries Berlin, Germany (3 months)
2018-2018	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, Switzerland (8 months)
2014-2014	Visiting Professor, Institute of Freshwater Ecology and Inland Fisheries Berlin, Germany (3 months)
2013-2013	Visiting Professor, Institute of Freshwater Ecology and Inland Fisheries Berlin, Germany (3 months)
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 Switzerland (8 months)
2009-2015:	Associate Professor, Dept. Civil and Environmental Engineering, University of Iowa.
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.

-2014 – Univ. Iowa College of Engineering **Faculty Excellence Award for Research**

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 (e.g., boulders).

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, signals and luminaries, 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.

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 Eco-hydraulics, 2015-present
-Editorial Board Member, Environmental Fluid Mechanics journal, 2024-present
-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 COMMITTES

-IAHR Council member 2024-2026
-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, 2005-2026
-Member, IAHR Fluid Mechanics Committee, 2005-2015
-Member (NSF-sponsored) Community Surface Dynamics Modeling System, Cyber-informatics and Numerics Working Group, 2009-2016

SCIENTIFIC MEETINGS:

-Organizer and Chair of the *3rd IAHR International Symposium on Shallow Flows*, Iowa City, IA, USA, June 2012 (http://www.iihr.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 *XXXIIIst 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

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

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), 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)

LIST OF PUBLICATIONS

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

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:

129-Del Gaudio, A., Constantinescu, G., de Paola, F., Di Cristo, C. And Vacca, A. (2025) Turbulent dam-break waves of Newtonian and non-Newtonian fluids, J. Fluid Mechanics, 1019, A58, doi.org/10.1017/jfm.2025.10636

128-Chang, W.Y. and Constantinescu, G. (2025) Flow structure around a vertical cylinder placed in an open channel under combined wave-current flows, Physical Review Fluids, 10, 024804, doi.org/10.1103/PhysRevFluids.10.024804

127-Lazzarin, T., Constantinescu, G. and Viero, D. (2025) A nunerical investigation of flow field and bed stresses at a river bridge: effects of piers and of pressure-flow with deck overtopping, J. Hydraulic Engineering, 151(6), 05025003, doi.org/10.1061/JHEND8.HYENG-14119

126-O. Shumilova, A. Sukhodolov, N. Osadcha, A. Oreshchenko, G.Constantinescu, S. Afanasyev, M. Koken, V. Osadchy, B. Rhoads, K. Tockner, M. Monaghan, B. Schroeder, J.Nabyvanets, C.Wolter, O. Lietytska, J. Van de Koppel, N. Magas, S. Jaehnig, V. Lakisova, G. Trokhymenko, M. Venohr, V. Komorin, S. Stepanenko, V. Khilchevskyi, S. Domisch, M. Blettler, P. Gleick, L. De Meester, H.P. Grossart (2025) Environmental effects of the Kakhovka Dam destruction by warfare in Ukraine, Science, 387, issue 6739, 1181-1186, 10.1126/science.adn8655

125-Wu, H. and Constantinescu, G. (2025) On the structure and self-similarity of spatially-developing, rough-bed turbulent boundary layers over a mussel bed with active filtering, J. Fluid Mechanics, 1007, A40, doi:10.1017/jfm.2025.74

124- Chang, K. and Constantinescu, G. (2025) Gravity currents generated by surface cooling over an inclined surface, AGU Geographical Monograph 'Particulate Gravity Currents: Theory, experiments and environmental applications', doi.org/10.1002/9781394216727.ch7, Wiley, ISBN-10 1394216696.

123- 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

122-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

121-Constantinescu, G. and Gualtieri, G. (2024) River confluences: a review of recent field and numerical studies, *Environmental Fluid Mechanics*, 24(6), 1143-1191, DOI:10.1007/s10652-024-10002-4

120-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

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*, 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 parallell 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 compund channels,' *Journal Hydraulic Engineering,* 147(10), 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 alligned with the incomig 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

99**-** Horna-Munoz, D., Constantinescu, G., Rhoads, B., Quinn, L. and Sukhodolov, A. (2020) 'Density effects at a concordant bed, natural river confluence'. *Water Resources Research,* 56(4), Paper e2019WR026217, https://doi.org/10.1029/2019WR026217

98-Cushman-Roisin, B. And Constantinescu, G. (2020) 'Dynamical adjustment of two streams past their confluence,' *J. Hydraulics Research,* 58(2), 305-313*,* DOI: 10.1080/00221686.2019.1573765

97-Wu, P., Horna-Munoz, D., Constantinescu, G. and Quian, Z. (2020) 'Two-phase flow DES and URANS simulations of pump-intake bay vortices,' *Journal Hydraulics Research,* 58(1), 120-132*,* 10.1080/00221686.2018.1555552

96- Horna-Munoz, D. and Constantinescu, G. (2020) '3-D dam break flow simulations in simplified and complex domains,' *Advances in Water Resources*, 137, 103510, https://doi.org/10.1016/j.advwatres.2020.103510.

95-Cheng, Z. and Constantinescu, G. (2020) "Stratification effects on hydrodynamics and mixing at a river confluence with discordant bed," Environmental Fluid Mechanics, 20(4), 843-872, doi:10.1007/s10652-019-09725-6

94-La Forgia, G., Tokyay, T., Adduce, C. and Constantinescu, G. (2019) 'Bed shear stress and sediment entrainment potential for breaking of internal solitary waves'. *Advances in Water Resources,* 135, 103475*,* 10.1016/j.advwatres.2019.103475

93-Basnet, K. And Constantinescu, G. (2019) 'Effect of a bottom gap on mean flow and turbulence structure past vertical solid and porous plates situated in the vicinity of a horizontal channel bed,' *Physical Review Fluids,* 4(4), 044604, DOI: 10.1103/PhysRevFluids.4.044604

92-Ulloa, H., Constantinescu, G., Chang, K.S., Horna-Munoz, D., Sepulveda-Steiner, O., Bouffard, D. and Wuest, J. (2019) "Hydrodynamics of a periodically wind-forced small and narrow stratified basin: a large eddy simulation experiment," *Environmental Fluid Mechanics, 19(3), 667-698,* 10.1007/s10652-018-9645-1

91- La Forgia, G., Tokyay, T., Adduce, C. And Constantinescu, G. (2018) 'Numerical investigation of breaking internal waves,' *Phys. Rev. Fluids*, 3(10), 104801, DOI 10.1103/PhysRevFluids.3.104801

90-Horna-Munoz, D. and Constantinescu, G. (2018) "A fully 3-D numerical model to predict flood wave propagation and assess efficiency of flood protection measures" *Advances in Water Resources,* 122, 148-165, 10.1016/j.advwatres.2018.10.014

89-Cheng, Z. and Constantinescu, G. (2018) "Stratification effects on flow hydrodynamics and mixing at a confluence with a highly discordant bed and a relatively low velocity ratio," *Water Resources Research,* 54(7), 4537-4562, 10.1029/2017WR022292

88-Cheng, Z., Koken, M. and Constantinescu, G. (2018) "Approximate methodology to account for effects of coherent structures on sediment entrainment in RANS simulations with a movable bed and applications to pier scour" *Advances in Water Resources,* 120, 65-82, 10.1016/j.advwatres.2017.05.019

87-Yuksel-Ozan, A. and Constantinescu, G. (2018) "Front velocity and structure of bottom gravity currents with a low volume of release propagating in a porous medium," *Environmental Fluid Mechanics*, 18(1), 241-265, DOI 10.1007/s10652-016-9490-z

86-Chang, K.S. and Constantinescu, G. (2018) "2D eddy resolving simulations of flow past a circular patch of cylinders*" Journal of Hydrodynamics B,* 30(2), 317-335, doi.org/10.1007/s42241-018-0030-9

85- Basnet, K. And Constantinescu, G. (2017) “The structure of flow around a porous vertical plate attached to a horizontal bed,“ *Physics of Fluids,* 29(11), 115101, doi.org/10.1063/1.5009310

84-Chang, W.Y., Constantinescu, G. And Tsai, W.Y. (2017) “On the flow and coherent structures generated by an array of rigid energed cylinders place in an open channel with flat and deformed bed,“ *Journal of Fluid Mechanics,* 831, 1-40, doi.org/10.1017/jfm.2017.558

83-Sommer T, Danza, F., Berg, J., Sengupta, A., Constantinescu, G., Tokyay, T., Bürgmann, H., Dressler, Y., Schubert, C. and Wüest, A. (2017) “Bacteria induced mixing in natural waters“ *Geophysical Research Letters,* 44(18), 9424-9432*,* GRL56346, DOI: 10.1002/2017GL074868

82-Sukhodolov, A., Krick, J., Sukhodolova, T., Cheng, Z., Rhoads, B. and Constantinescu, G. (2017) “Turbulent flow structure at a discordant river confluence: Asymmetric jet dynamics with implications for channel morphology” *J. Geophysical Research Earth Surface,* 122, 1278-1293, doi:10.1002/2016JF004126

81-Zeng, J. and Constantinescu, G. (2017) “Flow and coherent structures around circular cylinders in shallow water” *Physics of Fluids, 29(6),* 066601, DOI: 10.1063/1.4984926

80-Guillem Ludena, S., Cheng, Z., Constantinescu, G. and Franca, M.J. (2017) “Hydrodynamics of mountain river confluences and its relationship to sediment transport,” *J. Geophysical Research Earth Surface,* 122, doi:10.1002/2016JF0044122

79-Steenhauer, K., Tokyay, T. and Constantinescu, G. (2017) “Dynamics and structure of planar gravity currents propagating down an inclined surface”, *Physics of Fluids,* 29(3), 036604, 10.1063/1.4979063

78- Ettema, R, Constantinescu, G. and Melville, B. (2017) “Flow field complexity and design estimation of pier scour depth: Sixty years since Laursen and Toch ” *J Hydraulics Engineering,* 143(9), 03117006 , doi.org/10.1061/(ASCE)HY.1943-7900.0001330

77-Yuksel-Ozan, A., Constantinescu, G. and H. Nepf (2016) “Free surface gravity currents propagating in an open channel containing a porous layer at the free surface,” *Journal of Fluid Mechanics,* 809, 601-627, doi:10.1017/jfm2016.698

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