

George Constantinescu

List of Publications by Year in descending order

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141
papers

5,632
citations

57758

44
h-index

91884

69
g-index

148
all docs

148
docs citations

148
times ranked

2520
citing authors

#	ARTICLE	IF	CITATIONS
1	A numerical method for large-eddy simulation in complex geometries. Journal of Computational Physics, 2004, 197, 215-240.	3.8	410
2	Numerical investigations of flow over a sphere in the subcritical and supercritical regimes. Physics of Fluids, 2004, 16, 1449-1466.	4.0	172
3	Coherent Structures in the Flow Field around a Circular Cylinder with Scour Hole. Journal of Hydraulic Engineering, 2008, 134, 572-587.	1.5	162
4	Structure of turbulent flow at a river confluence with momentum and velocity ratios close to 1: Insight provided by an eddy-resolving numerical simulation. Water Resources Research, 2011, 47, .	4.2	153
5	LES and DES Investigations of Turbulent Flow over a Sphere at Re = 10,000. Flow, Turbulence and Combustion, 2003, 70, 267-298.	2.6	123
6	Analysis of the flow and mass transfer processes for the incompressible flow past an open cavity with a laminar and a fully turbulent incoming boundary layer. Journal of Fluid Mechanics, 2006, 561, 113.	3.4	123
7	Numerical Investigation of Flow Hydrodynamics in a Channel with a Series of Groynes. Journal of Hydraulic Engineering, 2008, 134, 157-172.	1.5	120
8	Numerical Model for Simulation of Pump-Intake Flow and Vortices. Journal of Hydraulic Engineering, 1998, 124, 123-134.	1.5	113
9	Numerical analysis of the effect of momentum ratio on the dynamics and sediment-entrainment capacity of coherent flow structures at a stream confluence. Journal of Geophysical Research, 2012, 117, .	3.3	112
10	Large-Eddy Simulation of Reacting Turbulent Flows in Complex Geometries. Journal of Applied Mechanics, Transactions ASME, 2006, 73, 374-381.	2.2	109
11	Numerical simulations of lock-exchange compositional gravity current. Journal of Fluid Mechanics, 2009, 635, 361-388.	3.4	103
12	Turbulence Modeling Applied to Flow over a Sphere. AIAA Journal, 2003, 41, 1733-1742.	2.6	100
13	Flow and bathymetry in sharp open-channel bends: Experiments and predictions. Water Resources Research, 2008, 44, .	4.2	99
14	Detached Eddy Simulation Investigation of Turbulence at a Circular Pier with Scour Hole. Journal of Hydraulic Engineering, 2009, 135, 888-901.	1.5	98
15	The structure of turbulent flow in an open channel bend of strong curvature with deformed bed: Insight provided by detached eddy simulation. Water Resources Research, 2011, 47, .	4.2	94
16	The application of computational fluid dynamics to natural river channels: Eddy resolving versus mean flow approaches. Geomorphology, 2012, 179, 1-20.	2.6	93
17	Numerical investigation of flow and turbulence structure through and around a circular array of rigid cylinders. Journal of Fluid Mechanics, 2015, 776, 161-199.	3.4	91
18	An investigation of the dynamics of coherent structures in a turbulent channel flow with a vertical sidewall obstruction. Physics of Fluids, 2009, 21, .	4.0	86

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19	An investigation of the flow and scour mechanisms around isolated spur dikes in a shallow open channel: 1. Conditions corresponding to the initiation of the erosion and deposition process. <i>Water Resources Research</i> , 2008, 44, .	4.2	80
20	Effects of cylinder Reynolds number on the turbulent horseshoe vortex system and near wake of a surface-mounted circular cylinder. <i>Physics of Fluids</i> , 2015, 27, .	4.0	77
21	Flow-Field Complexity and Design Estimation of Pier-Scour Depth: Sixty Years since Laursen and Toch. <i>Journal of Hydraulic Engineering</i> , 2017, 143, .	1.5	77
22	A Highly Accurate Technique for the Treatment of Flow Equations at the Polar Axis in Cylindrical Coordinates Using Series Expansions. <i>Journal of Computational Physics</i> , 2002, 183, 165-186.	3.8	74
23	Flow and turbulence structure around an in-stream rectangular cylinder with scour hole. <i>Water Resources Research</i> , 2010, 46, .	4.2	74
24	Turbulent flow structure at a discordant river confluence: Asymmetric jet dynamics with implications for channel morphology. <i>Journal of Geophysical Research F: Earth Surface</i> , 2017, 122, 1278-1293.	2.8	72
25	Numerical evaluation of the effects of planform geometry and inflow conditions on flow, turbulence structure, and bed shear velocity at a stream confluence with a concordant bed. <i>Journal of Geophysical Research F: Earth Surface</i> , 2014, 119, 2079-2097.	2.8	68
26	Lock-exchange gravity currents with a high volume of release propagating over a periodic array of obstacles. <i>Journal of Fluid Mechanics</i> , 2011, 672, 570-605.	3.4	65
27	Experimental Validation of Numerical Model of Flow in Pump-Intake Bays. <i>Journal of Hydraulic Engineering</i> , 1999, 125, 1119-1125.	1.5	64
28	Effects of Vegetation on Turbulence, Sediment Transport, and Stream Morphology. <i>Journal of Hydraulic Engineering</i> , 2012, 138, 765-776.	1.5	64
29	Influence of planform geometry and momentum ratio on thermal mixing at a stream confluence with a concordant bed. <i>Environmental Fluid Mechanics</i> , 2016, 16, 845-873.	1.6	64
30	An investigation of the flow and scour mechanisms around isolated spur dikes in a shallow open channel: 2. Conditions corresponding to the final stages of the erosion and deposition process. <i>Water Resources Research</i> , 2008, 44, .	4.2	63
31	Mass exchange in a shallow channel flow with a series of groynes: LES study and comparison with laboratory and field experiments. <i>Environmental Fluid Mechanics</i> , 2009, 9, 587-615.	1.6	61
32	Role of Turbulence Model in Prediction of Pump-Bay Vortices. <i>Journal of Hydraulic Engineering</i> , 2000, 126, 387-391.	1.5	59
33	Gravity currents impinging on bottom-mounted square cylinders: flow fields and associated forces. <i>Journal of Fluid Mechanics</i> , 2009, 631, 65-102.	3.4	59
34	Influence of Channel Aspect Ratio and Curvature on Flow, Secondary Circulation, and Bed Shear Stress in a Rectangular Channel Bend. <i>Journal of Hydraulic Engineering</i> , 2012, 138, 1045-1059.	1.5	59
35	LES and DES investigations of turbulent flow over a sphere. , 2000, , .		58
36	Validation of a Large-Eddy Simulation Model to Simulate Flow in Pump Intakes of Realistic Geometry. <i>Journal of Hydraulic Engineering</i> , 2006, 132, 1303-1315.	1.5	56

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37	On the flow and coherent structures generated by a circular array of rigid emerged cylinders placed in an open channel with flat and deformed bed. <i>Journal of Fluid Mechanics</i> , 2017, 831, 1-40.	3.4	56
38	Hydrodynamics of mountainâ€river confluences and its relationship to sediment transport. <i>Journal of Geophysical Research F: Earth Surface</i> , 2017, 122, 901-924.	2.8	55
39	Assessment of Predictive Capabilities of Detached Eddy Simulation to Simulate Flow and Mass Transport Past Open Cavities. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2007, 129, 1372-1383.	1.5	54
40	A numerical investigation of coherent structures and mass exchange processes in channel flow with two lateral submerged groynes. <i>Water Resources Research</i> , 2007, 43, .	4.2	53
41	2D Large-Eddy Simulation of Lock-Exchange Gravity Current Flows at High Grashof Numbers. <i>Journal of Hydraulic Engineering</i> , 2007, 133, 1037-1047.	1.5	51
42	Nature of flow and turbulence structure around an inâ€stream vertical plate in a shallow channel and the implications for sediment erosion. <i>Water Resources Research</i> , 2009, 45, .	4.2	50
43	Gravity current flow past a circular cylinder: forces, wall shear stresses and implications for scour. <i>Journal of Fluid Mechanics</i> , 2010, 649, 69-102.	3.4	49
44	A 3D non-hydrostatic model to predict flow and sediment transport in loose-bed channel bends. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2008, 46, 356-372.	1.7	47
45	Flow and turbulence structure around a spur dike in a channel with a large scour hole. <i>Water Resources Research</i> , 2011, 47, .	4.2	46
46	Tail structure and bed friction velocity distribution of gravity currents propagating over an array of obstacles. <i>Journal of Fluid Mechanics</i> , 2012, 694, 252-291.	3.4	45
47	Numerical simulations of inviscid three-dimensional flows at single- and dual-pump intakes. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2002, 40, 461-470.	1.7	44
48	Hydrodynamic processes and sediment erosion mechanisms in an open channel bend of strong curvature with deformed bathymetry. <i>Journal of Geophysical Research F: Earth Surface</i> , 2013, 118, 480-496.	2.8	41
49	The effects of a submerged non-erodible triangular obstacle on bottom propagating gravity currents. <i>Physics of Fluids</i> , 2015, 27, .	4.0	41
50	Numerical Investigation of Flow Past a Prolate Spheroid. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2002, 124, 904-910.	1.5	39
51	Purging of a Neutrally Buoyant or a Dense Miscible Contaminant from a Rectangular Cavity. II: Case of an Incoming Fully Turbulent Overflow. <i>Journal of Hydraulic Engineering</i> , 2007, 133, 373-385.	1.5	39
52	Hydrodynamic processes, sediment erosion mechanisms, and Reynolds-number-induced scale effects in an open channel bend of strong curvature with flat bathymetry. <i>Journal of Geophysical Research F: Earth Surface</i> , 2013, 118, 2308-2324.	2.8	39
53	Lock-exchange gravity currents with a low volume of release propagating over an array of obstacles. <i>Journal of Geophysical Research: Oceans</i> , 2014, 119, 2752-2768.	2.6	39
54	Numerical simulations of the near wake of a sphere moving in a steady, horizontal motion through a linearly stratified fluid at $Re = 1000$. <i>Physics of Fluids</i> , 2015, 27, .	4.0	39

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55	LE of shallow mixing interfaces: A review. <i>Environmental Fluid Mechanics</i> , 2014, 14, 971-996.	1.6	38
56	Bacteria-induced mixing in natural waters. <i>Geophysical Research Letters</i> , 2017, 44, 9424-9432.	4.0	38
57	A numerical study of the laminar necklace vortex system and its effect on the wake for a circular cylinder. <i>Physics of Fluids</i> , 2012, 24, .	4.0	37
58	Stratification Effects on Flow Hydrodynamics and Mixing at a Confluence With a Highly Discordant Bed and a Relatively Low Velocity Ratio. <i>Water Resources Research</i> , 2018, 54, 4537-4562.	4.2	36
59	Effect of array submergence on flow and coherent structures through and around a circular array of rigid vertical cylinders. <i>Physics of Fluids</i> , 2020, 32, .	4.0	35
60	Flow Structure around Bridge Piers of Varying Geometrical Complexity. <i>Journal of Hydraulic Engineering</i> , 2013, 139, 812-826.	1.5	34
61	Approximate methodology to account for effects of coherent structures on sediment entrainment in RANS simulations with a movable bed and applications to pier scour. <i>Advances in Water Resources</i> , 2018, 120, 65-82.	3.8	34
62	3-D dam break flow simulations in simplified and complex domains. <i>Advances in Water Resources</i> , 2020, 137, 103510.	3.8	33
63	Numerical investigation of breaking internal solitary waves. <i>Physical Review Fluids</i> , 2018, 3, .	2.5	33
64	Exchange Processes in a Channel with Two Vertical Emerged Obstructions. <i>Flow, Turbulence and Combustion</i> , 2006, 77, 97-126.	2.6	32
65	A numerical study of intrusive compositional gravity currents. <i>Physics of Fluids</i> , 2007, 19, .	4.0	32
66	LES of lock-exchange compositional gravity currents: a brief review of some recent results. <i>Environmental Fluid Mechanics</i> , 2014, 14, 295-317.	1.6	29
67	Dynamics and structure of planar gravity currents propagating down an inclined surface. <i>Physics of Fluids</i> , 2017, 29, 036604.	4.0	29
68	Density Effects at a Concordant Bed Natural River Confluence. <i>Water Resources Research</i> , 2020, 56, e2019WR026217.	4.2	29
69	A fully 3-D numerical model to predict flood wave propagation and assess efficiency of flood protection measures. <i>Advances in Water Resources</i> , 2018, 122, 148-165.	3.8	28
70	Flow and Turbulence Structure past a Cluster of Freshwater Mussels. <i>Journal of Hydraulic Engineering</i> , 2013, 139, 347-358.	1.5	26
71	Flow and coherent structures around circular cylinders in shallow water. <i>Physics of Fluids</i> , 2017, 29, .	4.0	26
72	3D Calculations of Equilibrium Conditions in Loose-Bed Open Channels with Significant Suspended Sediment Load. <i>Journal of Hydraulic Engineering</i> , 2010, 136, 557-571.	1.5	25

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73	Coherent structures in flow over two-dimensional dunes. <i>Water Resources Research</i> , 2013, 49, 2446-2460.	4.2	25
74	Simulation of airflow around rain gauges: Comparison of LES with RANS models. <i>Advances in Water Resources</i> , 2007, 30, 43-58.	3.8	23
75	Internal bores: an improved model via a detailed analysis of the energy budget. <i>Journal of Fluid Mechanics</i> , 2012, 703, 279-314.	3.4	23
76	Bed shear stress and sediment entrainment potential for breaking of internal solitary waves. <i>Advances in Water Resources</i> , 2020, 135, 103475.	3.8	23
77	Flow and Turbulence Structure around Abutments with Sloped Sidewalls. <i>Journal of Hydraulic Engineering</i> , 2014, 140, .	1.5	22
78	Stratification effects on hydrodynamics and mixing at a river confluence with discordant bed. <i>Environmental Fluid Mechanics</i> , 2020, 20, 843-872.	1.6	22
79	A method for characterising the sensitivity of turbulent flow fields to the structure of inlet turbulence. <i>Journal of Turbulence</i> , 2011, 12, N45.	1.4	21
80	Advective Lateral Transport of Streamwise Momentum Governs Mixing at Small River Confluences. <i>Water Resources Research</i> , 2020, 56, e2019WR026817.	4.2	21
81	Coherent structure dynamics and sediment erosion mechanisms around an in-stream rectangular cylinder at low and moderate angles of attack. <i>Water Resources Research</i> , 2011, 47, .	4.2	20
82	Lock-exchange gravity currents propagating in a channel containing an array of obstacles. <i>Journal of Fluid Mechanics</i> , 2015, 765, 544-575.	3.4	20
83	Flow Heterogeneity over 3D Cluster Microform: Laboratory and Numerical Investigation. <i>Journal of Hydraulic Engineering</i> , 2007, 133, 273-287.	1.5	19
84	The interaction of a gravity current with a circular cylinder mounted above a wall: Effect of the gap size. <i>Journal of Fluids and Structures</i> , 2009, 25, 629-640.	3.4	19
85	The Horseshoe Vortex System Around a Circular Bridge Pier on Equilibrium Scoured Bed. , 2005, , 1.		18
86	Gravity currents propagating over periodic arrays of blunt obstacles: Effect of the obstacle size. <i>Journal of Fluids and Structures</i> , 2011, 27, 798-806.	3.4	18
87	Shallow mixing layers between non-parallel streams in a flat-bed wide channel. <i>Journal of Fluid Mechanics</i> , 2021, 916, .	3.4	18
88	Investigation of Two Elemental Error Sources in Boat-Mounted Acoustic Doppler Current Profiler Measurements by Large Eddy Simulations. <i>Journal of Hydraulic Engineering</i> , 2009, 135, 875-887.	1.5	17
89	2-D eddy resolving simulations of flow past a circular array of cylindrical plant stems. <i>Journal of Hydrodynamics</i> , 2018, 30, 317-335.	3.2	17
90	Pressure-Based Residual Smoothing Operators for Multistage Pseudocompressibility Algorithms. <i>Journal of Computational Physics</i> , 1997, 133, 129-145.	3.8	15

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91	Method to Assess Efficiency and Improve Design of Snow Fences. Journal of Engineering Mechanics - ASCE, 2015, 141, .	2.9	15
92	Near- and far-field structure of shallow mixing layers between parallel streams. Journal of Fluid Mechanics, 2020, 904, .	3.4	15
93	Large eddy simulation of the velocity-intermittency structure for flow over a field of symmetric dunes. Journal of Fluid Mechanics, 2016, 805, 656-685.	3.4	14
94	Two-phase flow DES and URANS simulations of pump-intake bay vortices. Journal of Hydraulic Research/De Recherches Hydrauliques, 2020, 58, 120-132.	1.7	14
95	Flow structure inside and around a rectangular array of rigid emerged cylinders located at the sidewall of an open channel. Journal of Fluid Mechanics, 2021, 910, .	3.4	14
96	The structure of turbulent flow around vertical plates containing holes and attached to a channel bed. Physics of Fluids, 2017, 29, 115101.	4.0	13
97	Hydrodynamics of a periodically wind-forced small and narrow stratified basin: a large-eddy simulation experiment. Environmental Fluid Mechanics, 2019, 19, 667-698.	1.6	12
98	Free-surface gravity currents propagating in an open channel containing a porous layer at the free surface. Journal of Fluid Mechanics, 2016, 809, 601-627.	3.4	11
99	Close range photogrammetry for dynamically tracking drifted snow deposition. Cold Regions Science and Technology, 2016, 121, 141-153.	3.5	10
100	Validation of a 3D RANS model to predict flow and stratification effects related to fish passage at hydropower dams. Journal of Hydraulic Research/De Recherches Hydrauliques, 2007, 45, 787-796.	1.7	8
101	Purging of a Neutrally Buoyant or a Dense Miscible Contaminant from a Rectangular Cavity. I: Case of an Incoming Laminar Boundary Layer. Journal of Hydraulic Engineering, 2007, 133, 361-372.	1.5	7
102	Implementation of a Hydraulic Routing Model for Dendritic Networks with Offline Coupling to a Distributed Hydrological Model. Journal of Hydrologic Engineering - ASCE, 2015, 20, .	1.9	7
103	Dynamical adjustment of two streams past their confluence. Journal of Hydraulic Research/De Recherches Hydrauliques, 2020, 58, 305-313.	1.7	7
104	Hydro- and morphodynamics in curved river reaches “ recent results and directions for future research. Advances in Geosciences, 0, 37, 19-25.	12.0	7
105	Flow hydrodynamics, density contrast effects and mixing at the confluence between the Yangtze River and the Poyang Lake channel. Environmental Fluid Mechanics, 2023, 23, 229-257.	1.6	7
106	Flow and Entrainment Mechanisms Around a Freshwater Mussel Aligned With the Incoming Flow. Water Resources Research, 2020, 56, e2020WR027983.	4.2	6
107	Spatial development of a constant-depth shallow mixing layer in a long channel. , 2014, , 155-161.		6
108	Effect of a bottom gap on the mean flow and turbulence structure past vertical solid and porous plates situated in the vicinity of a horizontal channel bed. Physical Review Fluids, 2019, 4, .	2.5	5

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109	Hydrodynamics of Flow in a Channel with Two Lateral Submerged Groynes. , 2007, , 1.		4
110	A Study of the Interaction of a Gravity Current With a Square Cylinder Using Two-Dimensional Numerical Simulations. , 2007, , .		4
111	Horizontal transport under wind-induced resonance in stratified waterbodies. Physical Review Fluids, 2020, 5, .	2.5	4
112	Coherent Structures in a Channel with Groyne Fields: A Numerical Investigation Using LES. , 2005, , 1.		3
113	A Numerical Study of Wind Loads on Large Highway Sign Structures. , 2008, , .		3
114	A multi-parameter design formula for riprap size selection at wing-wall abutments. Journal of Hydraulic Research/De Recherches Hydrauliques, 2021, 59, 651-661.	1.7	3
115	Dynamics of shallow wakes on gravel-bed floodplains: dataset from field experiments. Earth System Science Data, 2021, 13, 1519-1529.	9.9	3
116	Rough Wall Flow Usingk- ĩ% Turbulence Model in FLUENT. , 2005, , 1.		2
117	An Investigation of Coherent Structures in the Wake of a Bridge Abutment at Equilibrium Bed Scour Conditions. , 2007, , .		2
118	Front velocity and structure of bottom gravity currents with a low volume of release propagating in a porous medium. Environmental Fluid Mechanics, 2018, 18, 241-265.	1.6	2
119	Coherent Structures and Mass Exchange Processes in Channel Flow with Spanwise Obstructions. , 2005, , 277-286.		2
120	A study of vertical non-uniformity of flow and mass exchange processes in a shallow mixing layer. , 2009, , .		2
121	Shallow mixing interfaces between parallel streams of unequal densities. Journal of Fluid Mechanics, 2022, 945, .	3.4	2
122	Closure to "Coherent Structures in the Flow Field around a Circular Cylinder with Scour Hole" by G. Kirkil, S. G. Constantinescu, and R. Ettema. Journal of Hydraulic Engineering, 2010, 136, 84-86.	1.5	1
123	Parameterization and Results of SWE for Gravity Currents Are Sensitive to the Definition of Depth. Journal of Hydraulic Engineering, 2021, 147, 04021016.	1.5	1
124	NUMERICAL SIMULATION OF FLOW PAST A POROUS CYLINDER WITH 20% SOLID VOLUME FRACTION. Journal of Computational Fluids Engineering, 2012, 17, 87-92.	0.0	1
125	Investigation of the velocity and pressure fluctuations distributions inside the turbulent horseshoe vortex system around a circular bridge pier. , 2006, , .		1
126	A numerical method for large-eddy simulation in complex geometries. , 2003, , 23-30.		0

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127	Large-eddy simulations of gravity current flows past submerged cylinders. Springer Proceedings in Physics, 2009, , 439-442.	0.2	0
128	Application of a 3-D CFD model to investigate flood-related engineering problems. E3S Web of Conferences, 2018, 40, 06004.	0.5	0
129	Review of Turbulence in Coastal and Civil Engineering by Mutlu Sumer and David Fuhrman World Scientific Publishing Co. Pte. Ltd., Singapore; 2020; ISBN: 978-981-3234-30-7; 731 pp.; \$178 hardcover \$71 ebook.. Journal of Hydraulic Engineering, 2020, 146, 07520002.	1.5	0
130	Design Formula for Sizing Rock Riprap at Spill-Through Abutments in Compound Channels. Journal of Hydraulic Engineering, 2021, 147, 06021012.	1.5	0
131	Validation of a new model to account for bed slope effect for prediction of equilibrium condition in loose bed channels with significant suspended sediment transport. , 2006, , .		0
132	A 3-D numerical investigation of the development of density driven finite-channel lock-release currents at high Grashof numbers. , 2006, , .		0
133	A Large Eddy Simulation study of the bed shear stress distributions around isolated and multiple groynes. , 2007, , 1233-1240.		0
134	A numerical study of the scale effects affecting the evolution and sediment entrainment capacity of a gravity current, propagating over a loose bed containing large-scale roughness elements. WIT Transactions on Engineering Sciences, 2009, , .	0.0	0
135	On the spatial development of the mixing layer at the interface between open water and a region containing emerged vegetation. , 2016, , .		0
136	Effect of level of inflow turbulence on the spatial development of a shallow mixing layer in an open channel. , 2016, , .		0
137	A numerical study of the effect of bed slope angle on the structure of gravity currents propagating over an incline. , 2016, , .		0
138	On the similarities and differences between thermally-driven lockexchange flows in fully and partially-vegetated channels. , 2016, , .		0
139	Effect of the solid volume fraction on the flow past a circular patch of vegetation with a low submergence depth. , 2016, , .		0
140	Effect of active filtering on flow around a partially submerged freshwater mussel. , 2020, , 1279-1283.		0
141	On Shallow Mixing Interfaces and Their Relevance for Understanding Mixing at River Confluences. ERCOFTAC Series, 2020, , 491-502.	0.1	0