

Michel Jj Pirotton

List of Publications by Year in descending order

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128
papers

1,958
citations

236925

25
h-index

315739

38
g-index

130
all docs

130
docs citations

130
times ranked

1120
citing authors

#	ARTICLE	IF	CITATIONS
1	Micro-scale flood risk analysis based on detailed 2D hydraulic modelling and high resolution geographic data. <i>Natural Hazards</i> , 2010, 55, 181-209.	3.4	121
2	Effects of spatial planning on future flood risks in urban environments. <i>Journal of Environmental Management</i> , 2018, 225, 193-204.	7.8	97
3	Experimental and numerical analysis of flow instabilities in rectangular shallow basins. <i>Environmental Fluid Mechanics</i> , 2008, 8, 31-54.	1.6	78
4	Experimental observation of flow characteristics over a Piano Key Weir. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2011, 49, 359-366.	1.7	74
5	Dam break flow computation based on an efficient flux vector splitting. <i>Journal of Computational and Applied Mathematics</i> , 2010, 234, 2143-2151.	2.0	69
6	Contribution of land use changes to future flood damage along the river Meuse in the Walloon region. <i>Natural Hazards and Earth System Sciences</i> , 2013, 13, 2301-2318.	3.6	68
7	Experimental parametric study and design of Piano Key Weirs. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2014, 52, 326-335.	1.7	64
8	Scale effects in physical piano key weirs models. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2016, 54, 692-698.	1.7	60
9	A naming convention for the Piano Key Weirs geometrical parameters. , 2011, , 271-278.		54
10	An exact Riemann solver and a Godunov scheme for simulating highly transient mixed flows. <i>Journal of Computational and Applied Mathematics</i> , 2011, 235, 2030-2040.	2.0	53
11	Experimental and numerical investigations of dike-break induced flows. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2009, 47, 349-359.	1.7	50
12	Depth-integrated flow modelling taking into account bottom curvature. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2006, 44, 785-795.	1.7	45
13	2D numerical flow modeling in a macro-rough channel. <i>International Journal for Numerical Methods in Fluids</i> , 2009, 61, 1227-1246.	1.6	45
14	Influence of urban pattern on inundation flow in floodplains of lowland rivers. <i>Science of the Total Environment</i> , 2018, 622-623, 446-458.	8.0	43
15	Detailed Inundation Modelling Using High Resolution DEMs. <i>Engineering Applications of Computational Fluid Mechanics</i> , 2010, 4, 196-208.	3.1	42
16	Shallow-water models with anisotropic porosity and merging for flood modelling on Cartesian grids. <i>Journal of Hydrology</i> , 2017, 554, 693-709.	5.4	41
17	Influence of urban forms on surface flow in urban pluvial flooding. <i>Journal of Hydrology</i> , 2020, 582, 124493.	5.4	39
18	Hydrodynamics of long-duration urban floods: experiments and numerical modelling. <i>Natural Hazards and Earth System Sciences</i> , 2016, 16, 1413-1429.	3.6	37

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19	Experimental investigation of flow pattern and sediment deposition in rectangular shallow reservoirs. <i>International Journal of Sediment Research</i> , 2010, 25, 258-270.	3.5	32
20	Overtopping induced failure of noncohesive, homogeneous fluvial dikes. <i>Water Resources Research</i> , 2017, 53, 3373-3386.	4.2	32
21	Classification of flow patterns in rectangular shallow reservoirs. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2010, 48, 197-204.	1.7	31
22	Failure of dams arranged in series or in complex. <i>Natural Hazards</i> , 2011, 56, 917-939.	3.4	31
23	Parapet Wall Effect on Piano Key Weir Efficiency. <i>Journal of Irrigation and Drainage Engineering - ASCE</i> , 2013, 139, 506-511.	1.0	30
24	Coupling between flow and sediment deposition in rectangular shallow reservoirs. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2013, 51, 535-547.	1.7	28
25	Underground Pumped-Storage Hydropower (UPSH) at the Martelange Mine (Belgium): Underground Reservoir Hydraulics. <i>Energies</i> , 2020, 13, 3512.	3.1	28
26	A fast universal solver for 1D continuous and discontinuous steady flows in rivers and pipes. <i>International Journal for Numerical Methods in Fluids</i> , 2011, 66, 38-48.	1.6	27
27	Numerical Investigation of Flow Patterns in Rectangular Shallow Reservoirs. <i>Engineering Applications of Computational Fluid Mechanics</i> , 2011, 5, 247-258.	3.1	26
28	Influence of urban forms on long-duration urban flooding: Laboratory experiments and computational analysis. <i>Journal of Hydrology</i> , 2021, 603, 127034.	5.4	24
29	Assessing the operation rules of a reservoir system based on a detailed modelling chain. <i>Natural Hazards and Earth System Sciences</i> , 2015, 15, 365-379.	3.6	19
30	Impacts of climate change on future flood damage on the river Meuse, with a distributed uncertainty analysis. <i>Natural Hazards</i> , 2015, 77, 1533-1549.	3.4	19
31	Discharge coefficient for free and submerged flow over Piano Key weirs. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2012, 50, 642-643.	1.7	17
32	Pressure and velocity on an ogee spillway crest operating at high head ratio: Experimental measurements and validation. <i>Journal of Hydro-Environment Research</i> , 2018, 19, 128-136.	2.2	17
33	Meandering jets in shallow rectangular reservoirs: POD analysis and identification of coherent structures. <i>Experiments in Fluids</i> , 2014, 55, 1.	2.4	16
34	Procedural generation of flood-sensitive urban layouts. <i>Environment and Planning B: Urban Analytics and City Science</i> , 2020, 47, 889-911.	2.0	16
35	Exchange between drainage systems and surface flows during urban flooding: Quasi-steady and dynamic modelling in unsteady flow conditions. <i>Journal of Hydrology</i> , 2021, 602, 126628.	5.4	16
36	River modelling and flood mitigation in a Belgian catchment. <i>Water Management</i> , 2010, 163, 417-423.	1.2	15

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37	1D numerical modeling of the flow over a Piano Key Weir. , 2011, , 151-158.		15
38	Flow patterns and sediment deposition in rectangular shallow reservoirs. Water and Environment Journal, 2012, 26, 504-510.	2.2	15
39	Innovative modelling of 3D unsaturated flow in porous media by coupling independent models for vertical and lateral flows. Journal of Computational and Applied Mathematics, 2013, 246, 38-51.	2.0	15
40	Nappe Oscillations on Free-Overfall Structures: Experimental Analysis. Journal of Hydraulic Engineering, 2018, 144, .	1.5	14
41	Floodplain Backwater Effect on Overtopping Induced Fluvial Dike Failure. Water Resources Research, 2018, 54, 9060-9073.	4.2	14
42	Experimental investigation of meandering jets in shallow reservoirs. Environmental Fluid Mechanics, 2014, 14, 699-710.	1.6	12
43	Technical Note: An Operational Implementation of Recursive Digital Filter for Base Flow Separation. Water Resources Research, 2018, 54, 8528-8540.	4.2	12
44	Porosity Models for Large-Scale Urban Flood Modelling: A Review. Water (Switzerland), 2021, 13, 960.	2.7	12
45	1D unified mathematical model for environmental flow applied to steady aerated mixed flows. Advances in Engineering Software, 2011, 42, 660-670.	3.8	11
46	Modelling sediment transport over partially non-erodible bottoms. International Journal for Numerical Methods in Fluids, 2012, 70, 186-199.	1.6	11
47	Technical note: Laboratory modelling of urban flooding: strengths and challenges of distorted scale models. Hydrology and Earth System Sciences, 2019, 23, 1567-1580.	4.9	11
48	Overtopping-Induced Failure of Non-Cohesive Homogeneous Fluvial Dikes: Effect of Dike Geometry on Breach Discharge and Widening. Water Resources Research, 2021, 57, e2021WR029660.	4.2	11
49	Experimental and Numerical Study of the Effect of Model Geometric Distortion on Laboratory Modeling of Urban Flooding. Water Resources Research, 2021, 57, e2021WR029666.	4.2	11
50	Experimental study of velocity fields in rectangular shallow reservoirs. Journal of Hydraulic Research/De Recherches Hydrauliques, 2012, 50, 435-436.	1.7	10
51	Three-phase bi-layer model for simulating mixed flows. Journal of Hydraulic Research/De Recherches Hydrauliques, 2012, 50, 312-319.	1.7	9
52	Stochastic Modelling of Reservoir Sedimentation in a Semi-Arid Watershed. Water Resources Management, 2015, 29, 785-800.	3.9	9
53	Flow and detailed 3D morphodynamic data from laboratory experiments of fluvial dike breaching. Scientific Data, 2019, 6, 53.	5.3	9
54	Hydraulics of Piano Key Weirs: A review. , 2017, , 27-36.		9

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55	Can Meandering Flows in Shallow Rectangular Reservoirs Be Modeled with the 2D Shallow Water Equations?. Journal of Hydraulic Engineering, 2015, 141, .	1.5	8
56	HÃ©tÃ©rogÃ©nÃ©itÃ© des Ã©chelles spatio-temporelles d'Ã©coulements hydroÃ©dimentaires et modÃ©lisation numÃ©rique. Houille Blanche, 2008, 94, 109-114.	0.3	8
57	Discharge Redistribution as a Key Process for Heuristic Optimization of Energy Production with Pumps as Turbines in a Water Distribution Network. Water Resources Management, 2022, 36, 1237-1250.	3.9	8
58	Theoretical and numerical analysis of the influence of the bottom friction formulation in free surface flow modelling. Water S A, 2011, 37, .	0.4	7
59	Discretization of the divergence formulation of the bed slope term in the shallow-water equations and consequences in terms of energy balance. Applied Mathematical Modelling, 2016, 40, 7532-7544.	4.2	7
60	Numerical Insights Into the Effects of Model Geometric Distortion in Laboratory Experiments of Urban Flooding. Water Resources Research, 2020, 56, e2019WR026774.	4.2	7
61	Apparent cohesion effects on overtopping-induced fluvial dike breaching. Journal of Hydraulic Research/De Recherches Hydrauliques, 2021, 59, 75-87.	1.7	7
62	Analyse expÃ©rimentale de lâ€™influence des largeurs d'Ã©vÃ©nements sur la dÃ©bitance des dÃ©versoirs en touches de piano. Houille Blanche, 2010, 96, 22-28.	0.3	7
63	Geometric parameters influence on Piano Key Weir hydraulic performances. , 2014, , .		7
64	Performance of a shallow-water model for simulating flow over trapezoidal broad-crested weirs. Journal of Hydrology and Hydromechanics, 2019, 67, 322-328.	2.0	7
65	Integrated assessment of flood protection measures in the context of climate change: hydraulic modelling and economic approach. WIT Transactions on Ecology and the Environment, 2008, , .	0.0	7
66	Piano Key Weirs: the experimental study of an efficient solution for rehabilitation. WIT Transactions on Ecology and the Environment, 2010, , .	0.0	7
67	Semi-Explicit Modelling of Watersheds with Urban Drainage Systems. Engineering Applications of Computational Fluid Mechanics, 2012, 6, 46-57.	3.1	6
68	Long-Term Sediment Management for Sustainable Hydropower. , 2012, , 355-376.		6
69	Method for the preliminary design of Piano Key Weirs. Houille Blanche, 2012, 98, 14-18.	0.3	6
70	Dike-break induced flows: a simplified model. Environmental Fluid Mechanics, 2013, 13, 89-100.	1.6	6
71	Prediction of Mean and Turbulent Kinetic Energy In Rectangular Shallow Reservoirs. Engineering Applications of Computational Fluid Mechanics, 2014, 8, 586-597.	3.1	6
72	Computing flooding of crossroads with obstacles using a 2D numerical model. Journal of Hydraulic Research/De Recherches Hydrauliques, 2017, 55, 737-741.	1.7	6

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73	Hydraulic Determination of Dam Releases to Generate Warning Waves in a Mountain Stream: Performance of an Analytical Kinematic Wave Model. Journal of Hydraulic Engineering, 2018, 144, 05017006.	1.5	6
74	Nappe Oscillations on Free-Overfall Structures: Size Scale Effects. Journal of Hydraulic Engineering, 2019, 145, 04019022.	1.5	6
75	Nappe oscillations on free-overfall structures, data from laboratory experiments. Scientific Data, 2020, 7, 180.	5.3	6
76	Trying to choose the less bad route: Individual migratory behaviour of Atlantic salmon smolts (Salmo Tj ETQq0 0 0 rgBT /Overlock 10 Tf Engineering, 2021, 169, 106304.	3.6	6
77	Simulation numÃ©rique des Ã©coulements mixtes hautement transitoires dans les conduites d'Ã©vacuation des eaux. Houille Blanche, 2009, 95, 159-166.	0.3	6
78	Integration of accurate 2D inundation modelling, vector land use database and economic damage evaluation. , 2008, , 1643-1653.		6
79	Two-dimensional depth-averaged finite volume model for unsteady turbulent flows. Journal of Hydraulic Research/De Recherches Hydrauliques, 2014, 52, 148-150.	1.7	5
80	Can the collapse of a fly ash heap develop into an air-fluidized flow? â€” Reanalysis of the Jupille accident (1961). Geomorphology, 2015, 228, 746-755.	2.6	5
81	Development trajectory of an integrated framework for the mitigation of future flood risk: results from the FloodLand project. Transportation Letters, 2018, 10, 243-256.	3.1	5
82	Monitoring topography of laboratory fluvial dike models subjected to breaching based on a laser profilometry technique. , 2016, , 380-386.		5
83	Laboratory modelling of urban flooding. Scientific Data, 2022, 9, 159.	5.3	5
84	Flow field in shallow reservoir with varying inlet and outlet position. Journal of Hydraulic Research/De Recherches Hydrauliques, 2018, 56, 689-696.	1.7	4
85	Maximum energy dissipation to explain velocity fields in shallow reservoirs. Journal of Hydraulic Research/De Recherches Hydrauliques, 2018, 56, 221-230.	1.7	4
86	Discrepancies in Flood Modelling Approaches in Transboundary River Systems: Legacy of the Past or Well-grounded Choices?. Water Resources Management, 2020, 34, 3465-3478.	3.9	4
87	CaractÃ©risation micro-echelle du risque d'Ã©minondation : modÃ©lisation hydraulique d'Ã©taille et quantification des impacts socio-Ã©conomiques. Houille Blanche, 2011, 97, 28-34.	0.3	4
88	Sensitivity of the breaching process in the case of overtopping induced fluvial dike failure. , 2016, , .		4
89	Experimental and numerical investigation of mixed flow in a gallery. WIT Transactions on Engineering Sciences, 2009, , .	0.0	4
90	Local Head-Loss Coefficient at the Rectangular Transition from a Free-Surface Channel to a Conduit. Journal of Hydraulic Engineering, 2013, 139, 1318-1323.	1.5	3

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91	Continuous Monitoring of Fluvial Dike Breaching by a Laser Profilometry Technique. Water Resources Research, 2020, 56, e2019WR026941.	4.2	3
92	Age of Water Particles as a Diagnosis of Steady-State Flows in Shallow Rectangular Reservoirs. Water (Switzerland), 2020, 12, 2819.	2.7	3
93	Occurrence and Characteristic Frequencies of Nappe Oscillations at Free-Overfall Structures. Journal of Hydraulic Engineering, 2021, 147, .	1.5	3
94	Detailed 2D flow simulations as an onset for evaluating socio-economic impacts of floods. , 2008, , 125-135.		3
95	Impact of climate change on inundation hazard along the river Meuse. , 2013, , 19-27.		3
96	Energy conservation properties of Ritter solution for idealized dam break flow. Journal of Hydraulic Research/De Recherches Hydrauliques, 2016, 54, 581-585.	1.7	2
97	Efficient hydraulic numerical modeling with multiblock grids and linked models. Houille Blanche, 2011, 97, 56-62.	0.3	2
98	Numerical simulation of one-dimensional mixed flow with air/water interaction. , 2009, , .		2
99	Composite modeling to enhance hydraulic structures studies. Houille Blanche, 2012, 98, 34-40.	0.3	2
100	Dam Break Flow Modelling with Uncertainty Analysis. , 2014, , 107-116.		2
101	Discussion of "Sensitivity Analysis of Nonequilibrium Adaptation Parameters for Modeling Mining-Pit Migration" by Dong Chen, Kumud Acharya, and Mark Stone. Journal of Hydraulic Engineering, 2013, 139, 799-801.	1.5	1
102	Impacts of urban expansion on future flood damage: A case study in the River Meuse basin, Belgium. , 2016, , 856-862.		1
103	Discussion of "Laboratory Study on 3D Flow Structures Induced by Zero-Height Side Weir and Implications for 1D Modeling" by Giovanni Michelazzo, Hocine Oumeraci, and Enio Paris. Journal of Hydraulic Engineering, 2017, 143, .	1.5	1
104	An Optimized and Scalable Algorithm for the Fast Convergence of Steady 1-D Open-Channel Flows. Water (Switzerland), 2020, 12, 3218.	2.7	1
105	Discussion of "Modeling and Prototype Testing of Flows over Flip-Bucket Aerators" by Penghua Teng and James Yang. Journal of Hydraulic Engineering, 2020, 146, .	1.5	1
106	An efficient global methodology for hazard analysis of dam complexes and cascades. WIT Transactions on Information and Communication Technologies, 2008, , .	0.0	1
107	Peut-on estimer l'effet du changement climatique sur l'écoulement à exutoire d'un bassin sans modèle pluie-débit ? un test de la méthode de transfert climat-écoulement par régression dans le bassin transnational de la meuse. Climatologie, 2017, 14, 48-81.	0.2	1
108	Experimental Assessment of the Influence of Fish Passage Geometry Parameters on Downstream Migrating Atlantic Salmon (Salmo salar) Smolts Behavior. Water (Switzerland), 2022, 14, 616.	2.7	1

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109	Modeling the Vertical Spincasting of Large Bimetallic Rolling Mill Rolls. Key Engineering Materials, 2010, 443, 15-20.	0.4	0
110	Closure to "Parapet Wall Effect on Piano Key Weir Efficiency" by O. Machiels, S. Erpicum, P. Archambeau, B. Dewals, and M. Piroton. Journal of Irrigation and Drainage Engineering - ASCE, 2015, 141, 07014033.	1.0	0
111	Improvement of anisotropic porosity models with a merging technique. E3S Web of Conferences, 2018, 40, 06023.	0.5	0
112	Considering bottom curvature in depth-averaged open-channel flow modelling, based on curvilinear coordinates. WIT Transactions on Engineering Sciences, 2008, , .	0.0	0
113	Numerical modelling of transient flows with high sediment concentrations. WIT Transactions on Engineering Sciences, 2008, , .	0.0	0
114	Computational hemodynamics coupled with mechanical behaviour of the surrounded materials, in the specific case of the brachial artery. WIT Transactions on Biomedicine and Health, 2009, , .	0.0	0
115	Hydrodynamic forces acting on vertically translating bodies in free surface water. WIT Transactions on the Built Environment, 2009, , .	0.0	0
116	Continuous formulation for bottom friction in free surface flows modelling. , 2009, , .		0
117	Modélisation hydrologique à grande échelle des zones imperméables drainées. Houille Blanche, 2009, 95, 167-173.	0.3	0
118	Experimental investigation of flow and deposit patterns in rectangular shallow reservoirs. , 2009, , 169-172.		0
119	Blood Flow under External Strains: Phenomenological Approach, Theoretical Developments and Numerical Analysis. International Journal of Design and Nature and Ecodynamics, 2010, 5, 317-334.	0.5	0
120	Modélisation numérique 2D unifiée des écoulements sur des évacuateurs de crue avec déversoir. Houille Blanche, 2010, 96, 102-108.	0.3	0
121	Incorporating climate change scenarios into new operating rules for large reservoirs. , 2011, , 469-477.		0
122	Modélisation hydraulique détaillée d'inondations extrêmes sur un tronçon transnational de la Meuse. Houille Blanche, 2015, 101, 75-81.	0.3	0
123	Hydrodynamic instabilities in shallow reservoirs: Implications for sediment management. , 2016, , 1066-1066.		0
124	A Piano Key Weir to improve the discharge capacity of the Oule Dam spillway (France). , 2017, , 195-204.		0
125	15 Years of Composite Modelling to Enhance Hydraulic Structures Studies. Springer Water, 2018, , 751-766.	0.3	0
126	Quels scénarios de débordement de l'Ourthe (Belgique) en réponse à une variabilité climatique long terme?. Physio-Géo, 2019, , 25-51.	0.4	0

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127	Comparison of perturbation methods for rainfall and temperature data: case of a Belgian catchment. International Journal of Hydrology Science and Technology, 2019, 9, 266.	0.3	0
128	Integrated Flood Risk Analysis for Assessing Flood Protection Strategies. , 0, , 244-263.		0