

Benjamin Dewals

List of Publications by Year in descending order

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122
papers

2,029
citations

218677

26
h-index

289244

40
g-index

139
all docs

139
docs citations

139
times ranked

1463
citing authors

#	ARTICLE	IF	CITATIONS
1	Experimental modelling of urban flooding: A review. <i>Journal of Hydrology</i> , 2019, 568, 334-342.	5.4	129
2	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
3	Effects of spatial planning on future flood risks in urban environments. <i>Journal of Environmental Management</i> , 2018, 225, 193-204.	7.8	97
4	The need to integrate flood and drought disaster risk reduction strategies. <i>Water Security</i> , 2020, 11, 100070.	2.5	83
5	Experimental and numerical analysis of flow instabilities in rectangular shallow basins. <i>Environmental Fluid Mechanics</i> , 2008, 8, 31-54.	1.6	78
6	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
7	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
8	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
9	Scale effects in physical piano key weirs models. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2016, 54, 692-698.	1.7	60
10	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
11	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
12	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
13	Detailed Inundation Modelling Using High Resolution DEMs. <i>Engineering Applications of Computational Fluid Mechanics</i> , 2010, 4, 196-208.	3.1	42
14	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
15	Influence of urban forms on surface flow in urban pluvial flooding. <i>Journal of Hydrology</i> , 2020, 582, 124493.	5.4	39
16	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
17	Looking beyond general metrics for model comparison – lessons from an international model intercomparison study. <i>Hydrology and Earth System Sciences</i> , 2017, 21, 423-440.	4.9	34
18	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

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19	Overtopping induced failure of noncohesive, homogeneous fluvial dikes. <i>Water Resources Research</i> , 2017, 53, 3373-3386.	4.2	32
20	Hydraulic modelling of inland urban flooding: Recent advances. <i>Journal of Hydrology</i> , 2022, 609, 127763.	5.4	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	Behind the scenes of streamflow model performance. <i>Hydrology and Earth System Sciences</i> , 2021, 25, 1069-1095.	4.9	26
29	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
30	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
31	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
32	Formation, breaching and flood consequences of a landslide dam near Bujumbura, Burundi. <i>Natural Hazards and Earth System Sciences</i> , 2018, 18, 1867-1890.	3.6	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	1D numerical modeling of the flow over a Piano KeyWeir. , 2011, , 151-158.		15

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37	Flow patterns and sediment deposition in rectangular shallow reservoirs. <i>Water and Environment Journal</i> , 2012, 26, 504-510.	2.2	15
38	Innovative modelling of 3D unsaturated flow in porous media by coupling independent models for vertical and lateral flows. <i>Journal of Computational and Applied Mathematics</i> , 2013, 246, 38-51.	2.0	15
39	Comparison Between Robust and Stochastic Optimisation for Long-term Reservoir Management Under Uncertainty. <i>Water Resources Management</i> , 2018, 32, 1599-1614.	3.9	14
40	Nappe Oscillations on Free-Overfall Structures: Experimental Analysis. <i>Journal of Hydraulic Engineering</i> , 2018, 144, .	1.5	14
41	Floodplain Backwater Effect on Overtopping Induced Fluvial Dike Failure. <i>Water Resources Research</i> , 2018, 54, 9060-9073.	4.2	14
42	Nappe flows on a stepped chute with prototype-scale steps height: Observations of flow patterns, air-water flow properties, energy dissipation and dissolved oxygen. <i>Journal of Hydro-Environment Research</i> , 2019, 27, 1-19.	2.2	13
43	Experimental investigation of meandering jets in shallow reservoirs. <i>Environmental Fluid Mechanics</i> , 2014, 14, 699-710.	1.6	12
44	Technical Note: An Operational Implementation of Recursive Digital Filter for Base Flow Separation. <i>Water Resources Research</i> , 2018, 54, 8528-8540.	4.2	12
45	Porosity Models for Large-Scale Urban Flood Modelling: A Review. <i>Water (Switzerland)</i> , 2021, 13, 960.	2.7	12
46	Does the Budyko curve reflect a maximum-power state of hydrological systems? A backward analysis. <i>Hydrology and Earth System Sciences</i> , 2016, 20, 479-486.	4.9	11
47	Technical note: Laboratory modelling of urban flooding: strengths and challenges of distorted scale models. <i>Hydrology and Earth System Sciences</i> , 2019, 23, 1567-1580.	4.9	11
48	Overtoppingâ€Induced Failure of Nonâ€Cohesive Homogeneous Fluvial Dikes: Effect of Dike Geometry on Breach Discharge and Widening. <i>Water Resources Research</i> , 2021, 57, e2021WR029660.	4.2	11
49	Experimental and Numerical Study of the Effect of Model Geometric Distortion on Laboratory Modeling of Urban Flooding. <i>Water Resources Research</i> , 2021, 57, e2021WR029666.	4.2	11
50	Experimental study of velocity fields in rectangular shallow reservoirs. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2012, 50, 435-436.	1.7	10
51	Three-phase bi-layer model for simulating mixed flows. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2012, 50, 312-319.	1.7	9
52	Stochastic Modelling of Reservoir Sedimentation in a Semi-Arid Watershed. <i>Water Resources Management</i> , 2015, 29, 785-800.	3.9	9
53	Flow and detailed 3D morphodynamic data from laboratory experiments of fluvial dike breaching. <i>Scientific Data</i> , 2019, 6, 53.	5.3	9
54	Environmental Inequalities in Flood Exposure: A Matter of Scale. <i>Frontiers in Water</i> , 2021, 3, .	2.3	9

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55	Water Soluble Polymers as a Means to Increase Flow Capacity: Field Experiment of Drag Reduction by Polymer Additives in an Irrigation Canal. <i>Journal of Hydraulic Engineering</i> , 2021, 147, .	1.5	9
56	Hydraulics of Piano Key Weirs: A review. , 2017, , 27-36.		9
57	Advanced Topics in Sediment Transport Modelling: Non-alluvial Beds and Hyperconcentrated Flows. , 2011, , .		8
58	Can Meandering Flows in Shallow Rectangular Reservoirs Be Modeled with the 2D Shallow Water Equations?. <i>Journal of Hydraulic Engineering</i> , 2015, 141, .	1.5	8
59	HÃ©tÃ©rogÃ©nÃ©itÃ© des Ã©chelles spatio-temporelles d'Ã©coulements hydrosÃ©dimentaires et modÃ©lisation numÃ©rique. <i>Houille Blanche</i> , 2008, 94, 109-114.	0.3	8
60	Discharge Redistribution as a Key Process for Heuristic Optimization of Energy Production with Pumps as Turbines in a Water Distribution Network. <i>Water Resources Management</i> , 2022, 36, 1237-1250.	3.9	8
61	Theoretical and numerical analysis of the influence of the bottom friction formulation in free surface flow modelling. <i>Water S A</i> , 2011, 37, .	0.4	7
62	Discretization of the divergence formulation of the bed slope term in the shallow-water equations and consequences in terms of energy balance. <i>Applied Mathematical Modelling</i> , 2016, 40, 7532-7544.	4.2	7
63	Numerical Insights Into the Effects of Model Geometric Distortion in Laboratory Experiments of Urban Flooding. <i>Water Resources Research</i> , 2020, 56, e2019WR026774.	4.2	7
64	Apparent cohesion effects on overtopping-induced fluvial dike breaching. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2021, 59, 75-87.	1.7	7
65	Analyse expÃ©rimentale de lâ€™influence des largeurs d'Ã©vÃ©nements sur la dÃ©bitance des dÃ©versoirs en touches de piano. <i>Houille Blanche</i> , 2010, 96, 22-28.	0.3	7
66	New trends in flood risk analysis: working with 2D flow models, laser DEM and a GIS environment. , 2004, , 1395-1401.		7
67	Integrated assessment of flood protection measures in the context of climate change: hydraulic modelling and economic approach. <i>WIT Transactions on Ecology and the Environment</i> , 2008, , .	0.0	7
68	Semi-Explicit Modelling of Watersheds with Urban Drainage Systems. <i>Engineering Applications of Computational Fluid Mechanics</i> , 2012, 6, 46-57.	3.1	6
69	Dike-break induced flows: a simplified model. <i>Environmental Fluid Mechanics</i> , 2013, 13, 89-100.	1.6	6
70	Prediction of Mean and Turbulent Kinetic Energy In Rectangular Shallow Reservoirs. <i>Engineering Applications of Computational Fluid Mechanics</i> , 2014, 8, 586-597.	3.1	6
71	Computing flooding of crossroads with obstacles using a 2D numerical model. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2017, 55, 737-741.	1.7	6
72	Hydraulic Determination of Dam Releases to Generate Warning Waves in a Mountain Stream: Performance of an Analytical Kinematic Wave Model. <i>Journal of Hydraulic Engineering</i> , 2018, 144, 05017006.	1.5	6

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73	Nappe Oscillations on Free-Overfall Structures: Size Scale Effects. Journal of Hydraulic Engineering, 2019, 145, 04019022.	1.5	6
74	Nappe oscillations on free-overfall structures, data from laboratory experiments. Scientific Data, 2020, 7, 180.	5.3	6
75	Trying to choose the less bad route: Individual migratory behaviour of Atlantic salmon smolts (Salmo Tj ETQq1 1 0.784314 rgBT /Over Engineering, 2021, 169, 106304.	3.6	6
76	Simulation numérique des écoulements mixtes hautement transitoires dans les conduites d'évacuation des eaux. Houille Blanche, 2009, 95, 159-166.	0.3	6
77	Integration of accurate 2D inundation modelling, vector land use database and economic damage evaluation. , 2008, , 1643-1653.		6
78	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
79	Can the collapse of a fly ash heap develop into an air-fluidized flow? " Reanalysis of the Jupille accident (1961). Geomorphology, 2015, 228, 746-755.	2.6	5
80	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
81	COMPUTATION OF THE MALPASSET DAM BREAK WITH A 2D CONSERVATIVE FLOW SOLVER ON A MULTIBLOCK STRUCTURED GRID. , 2004, , 277-284.		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	Caractérisation micro-échelle du risque d'inondation : modélisation hydraulique détaillée et quantification des impacts socio-économiques. 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	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
90	Continuous Monitoring of Fluvial Dike Breaching by a Laser Profilometry Technique. Water Resources Research, 2020, 56, e2019WR026941.	4.2	3

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91	Age of Water Particles as a Diagnosis of Steady-State Flows in Shallow Rectangular Reservoirs. Water (Switzerland), 2020, 12, 2819.	2.7	3
92	Occurrence and Characteristic Frequencies of Nappe Oscillations at Free-Overfall Structures. Journal of Hydraulic Engineering, 2021, 147, .	1.5	3
93	Detailed 2D flow simulations as an onset for evaluating socio-economic impacts of floods. , 2008, , 125-135.		3
94	Impact of climate change on inundation hazard along the river Meuse. , 2013, , 19-27.		3
95	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
96	Efficient hydraulic numerical modeling with multiblock grids and linked models. Houille Blanche, 2011, 97, 56-62.	0.3	2
97	Composite modeling to enhance hydraulic structures studies. Houille Blanche, 2012, 98, 34-40.	0.3	2
98	Dam Break Flow Modelling with Uncertainty Analysis. , 2014, , 107-116.		2
99	INSYDE-BE: adaptation of the INSYDE model to the Walloon region (Belgium). Natural Hazards and Earth System Sciences, 2022, 22, 1743-1761.	3.6	2
100	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
101	Impacts of urban expansion on future flood damage: A case study in the River Meuse basin, Belgium. , 2016, , 856-862.		1
102	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
103	Numerical Simulation of lateral dike breaching due to overtopping. E3S Web of Conferences, 2018, 40, 03025.	0.5	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	Automatic Geometrical Optimization by Way of Numerical Flow Models. , 2009, , 1663-1668.		1
107	A Systematic Procedure to Predict Flows Induced by Major Dysfunctions on Complexes or Cascades of Dams. , 2009, , 1868-1873.		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. Pirotton. 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	Numerical study of building drag dissipation formulations in the integral porosity shallow water model. E3S Web of Conferences, 2018, 40, 06017.	0.5	0
113	A set of efficient numerical tools for floodplain modeling. , 2004, , 549-558.		0
114	Modélisation hydrologique à grande échelle des zones imperméables drainées. Houille Blanche, 2009, 95, 167-173.	0.3	0
115	Experimental investigation of flow and deposit patterns in rectangular shallow reservoirs. , 2009, , 169-172.		0
116	Modélisation numérique 2D unifiée des écoulements sur des évacuateurs de crue avec déversoir. Houille Blanche, 2010, 96, 102-108.	0.3	0
117	Incorporating climate change scenarios into new operating rules for large reservoirs. , 2011, , 469-477.		0
118	Modélisation hydraulique détaillée d'inondations extrêmes sur un tronçon transnational de la Meuse. Houille Blanche, 2015, 101, 75-81.	0.3	0
119	Hydrodynamic instabilities in shallow reservoirs: Implications for sediment management. , 2016, , 1066-1066.		0
120	A Piano Key Weir to improve the discharge capacity of the Oule Dam spillway (France). , 2017, , 195-204.		0
121	15 Years of Composite Modelling to Enhance Hydraulic Structures Studies. Springer Water, 2018, , 751-766.	0.3	0
122	Unsteady shallow meandering flows in rectangular reservoirs: A modal analysis of URANS modelling. Journal of Hydro-Environment Research, 2022, 42, 12-20.	2.2	0