Maurizio Brocchini

List of Publications by Year
in descending order

152 papers	3,610 citations	136740 32 h-index	174990 52 g-index
156 all docs	156 docs citations	156 times ranked	2194 citing authors

#	Article	IF	Citations
1	The dynamics of strong turbulence at free surfaces. Part 1. Description. Journal of Fluid Mechanics, 2001, 449, 225-254.	1.4	250
2	Wave impact loads: The role of the flip-through. Physics of Fluids, 2006, 18, 122101.	1.6	145
3	A reasoned overview on Boussinesq-type models: the interplay between physics, mathematics and numerics. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20130496.	1.0	109
4	Recent advances in modeling swash zone dynamics: Influence of surfâ€swash interaction on nearshore hydrodynamics and morphodynamics. Reviews of Geophysics, 2008, 46, .	9.0	108
5	The dynamics of strong turbulence at free surfaces. Part 2. Free-surface boundary conditions. Journal of Fluid Mechanics, 2001, 449, 255-290.	1.4	102
6	Integral flow properties of the swash zone and averaging. Journal of Fluid Mechanics, 1996, 317, 241-273.	1.4	94
7	An efficient solver for nearshore flows based on the WAF method. Coastal Engineering, 2001, 43, 105-129.	1.7	94
8	Experimental investigation and numerical modelling of steep forced water waves. Journal of Fluid Mechanics, 2003, 490, 217-249.	1.4	88
9	Nonlinear Shallow Water Equation Modeling for Coastal Engineering. Journal of Waterway, Port, Coastal and Ocean Engineering, 2008, 134, 104-120.	0.5	81
10	On the modeling of sand wave migration. Journal of Geophysical Research, 2004, 109, .	3.3	79
11	Local scour around structures and the phenomenology of turbulence. Journal of Fluid Mechanics, 2015, 779, 309-324.	1.4	78
12	Advances in numerical modelling of swash zone dynamics. Coastal Engineering, 2016, 115, 26-41.	1.7	69
13	The Boundary Value Problem for the Nonlinear Shallow Water Equations. Studies in Applied Mathematics, 2007, 119, 73-93.	1.1	63
14	A study of violent sloshing wave impacts using an improved SPH method. Journal of Hydraulic Research/De Recherches Hydrauliques, 2010, 48, 94-104.	0.7	57
15	The morphodynamics of tidal sand waves: A model overview. Coastal Engineering, 2008, 55, 657-670.	1.7	51
16	The mean and turbulent flow structure of a weak hydraulic jump. Physics of Fluids, 2008, 20, .	1.6	51
17	Experimental investigation of the nearbed dynamics around a submarine pipeline laying on different types of seabed: The interaction between turbulent structures and particles. Advances in Water Resources, 2012, 48, 31-46.	1.7	51
18	A preliminary combined simulation tool for the risk assessment of pedestriansâ€™ flood-induced evacuation. Environmental Modelling and Software, 2017, 96, 14-29.	1.9	51

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19	Impulse waves generated by snow avalanches: Momentum and energy transfer to a water body. Journal of Geophysical Research F: Earth Surface, 2016, 121, 2399-2423.	1.0	48
20	An experimental study on sediment transport and bed evolution under different swash zone morphological conditions. Coastal Engineering, 2012, 68, 31-43.	1.7	47
21	A multi-purpose, intra-wave, shallow water hydro-morphodynamic solver. Advances in Water Resources, 2012, 38, 13-26.	1.7	43
22	Topographically controlled, breaking-wave-induced macrovortices. Part 1. Widely separated breakwaters. Journal of Fluid Mechanics, 2004, 507, 289-307.	1.4	42
23	Solving the nonlinear shallow-water equations in physical space. Journal of Fluid Mechanics, 2010, 643, 207-232.	1.4	42
24	Evolution of the air cavity during a depressurized wave impact. I. The kinematic flow field. Physics of Fluids, 2010, 22, .	1.6	41
25	An integral swash zone model with friction: an experimental and numerical investigation. Coastal Engineering, 2002, 45, 89-110.	1.7	40
26	Evolution of the air cavity during a depressurized wave impact. II. The dynamic field. Physics of Fluids, 2010, 22, .	1.6	40
27	Dynamical characteristics of an electrically actuated microbeam under the effects of squeeze-film and thermoelastic damping. International Journal of Engineering Science, 2013, 69, 16-32.	2.7	38
28	Towards the simulation of flood evacuation in urban scenarios: Experiments to estimate human motion speed in floodwaters. Safety Science, 2020, 123, 104563.	2.6	38
29	Topographically controlled, breaking-wave-induced macrovortices. Part 2. Changing geometries. Journal of Fluid Mechanics, 2006, 559, 57.	1.4	37
30	Experimental investigation of the wave-induced flow around a surface-touching cylinder. Journal of Fluids and Structures, 2013, 37, 62-87.	1.5	37
31	Free surface boundary conditions at a bubbly/weakly splashing airâ€“water interface. Physics of Fluids, 2002, 14, 1834-1840.	1.6	36
32	Boussinesq modeling of breaking waves: Description of turbulence. Journal of Geophysical Research, 2004, 109, .	3.3	32
33	Dispersive Nonlinear Shallowâ€Water Equations. Studies in Applied Mathematics, 2009, 122, 1-28.	1.1	31
34	Experimental Rotations of a Pendulum on Water Waves. Journal of Computational and Nonlinear Dynamics, 2012, 7, .	0.7	31
35	Beyond Boussinesq-type equations: Semi-integrated models for coastal dynamics. Physics of Fluids, 2013, 25, .	1.6	31
36	Horizontal mixing of quasi-uniform straight compound channel flows. Journal of Fluid Mechanics, 2010, 643, 425-435.	1.4	30

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37	Modelling the run-up of significant wave groups. Continental Shelf Research, 2001, 21, 1533-1550.	0.9	29
38	The effects of flow stratification by non-cohesive sediment on transport in high-energy wave-driven flows. Journal of Fluid Mechanics, 2008, 610, 43-67.	1.4	29
39	Comparison between the wintertime and summertime dynamics of the Misa River estuary. Marine Geology, 2017, 385, 27-40.	0.9	29
40	Hindcast of a storm surge induced by local real wind fields in the Venice Lagoon. Continental Shelf Research, 1997, 17, 1513-1538.	0.9	28
41	On the shoreline boundary conditions for Boussinesq-type models. International Journal for Numerical Methods in Fluids, 2001, 37, 479-500.	0.9	28
42	Maximum run-up, breaking conditions and dynamical forces in the swash zone: a boundary value approach. Coastal Engineering, 2008, 55, 732-740.	1.7	27
43	Prediction of scour depth at breakwaters due to non-breaking waves using machine learning approaches. Applied Ocean Research, 2017, 63, 120-128.	1.8	27
44	Prediction of non-breaking wave induced scour depth at the trunk section of breakwaters using Genetic Programming and Artificial Neural Networks. Coastal Engineering, 2017, 121, 107-118.	1.7	27
45	On the wave damping due to a permeable seabed. Coastal Engineering, 2010, 57, 1029-1041.	1.7	26
46	Sediment transport and morphodynamics generated by a dam-break swash uprush: Coupled vs uncoupled modeling. Coastal Engineering, 2014, 89, 99-105.	1.7	25
47	On the role of the Chezy frictional term near the shoreline. Theoretical and Computational Fluid Dynamics, 2012, 26, 105-116.	0.9	24
48	Numerical Modeling of the Influence of the Beach Profile on Wave Run-Up. Journal of Waterway, Port, Coastal and Ocean Engineering, 2013, 139, 61-71.	0.5	24
49	Experimental study of the short-term efficiency of different breakwater configurations on beach protection. Journal of Ocean Engineering and Marine Energy, 2016, 2, 195-210.	0.9	24
50	Hydro- and Morpho-dynamics Induced by a Vertical Slender Pile under Regular and Random Waves. Journal of Waterway, Port, Coastal and Ocean Engineering, 2018, 144, .	0.5	24
51	A comparison of two different types of shoreline boundary conditions. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 4475-4496.	3.4	23
52	Flow dynamics on a porous medium. Coastal Engineering, 2014, 91, 280-298.	1.7	22
53	On using Boussinesq-type equations near the shoreline: a note of caution. Ocean Engineering, 2002, 29, 1569-1575.	1.9	21
54	On shallow-water wakes: an analytical study. Journal of Fluid Mechanics, 2006, 567, 457.	1.4	21

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55	Lagrangian mixing in straight compound channels. Journal of Fluid Mechanics, 2011, 675, 168-198.	1.4	21
56	Transversal and longitudinal mixing in compound channels. Water Resources Research, 2012, 48, .	1.7	21
57	Scour depth under pipelines placed on weakly cohesive soils. Applied Ocean Research, 2015, 52, 73-79.	1.8	20
58	Experimental and Numerical Investigation of Pre-Breaking and Breaking Vorticity within a Plunging Breaker. Water (Switzerland), 2018, 10, 387.	1.2	20
59	Hydrodynamics at a microtidal inlet: Analysis of propagation of the main wave components. Estuarine, Coastal and Shelf Science, 2020, 235, 106603.	0.9	20
60	Calculation of a Mass-Consistent Two-Dimensional Wind Field with Divergence Control. Journal of Applied Meteorology and Climatology, 1995, 34, 2543-2555.	1.7	19
61	Estimation of complex airâ€"water interfaces from particle image velocimetry images. Experiments in Fluids, 2006, 40, 764-775.	1.1	19
62	A model chain approach for coastal inundation: Application to the bay of Alghero. Estuarine, Coastal and Shelf Science, 2019, 219, 56-70.	0.9	19
63	Efficiency evaluation of a ductless Archimedes turbine: Laboratory experiments and numerical simulations. Renewable Energy, 2020, 146, 867-879.	4.3	19
64	Comparative analysis of sea wave dissipation induced by three flow mechanisms. Journal of Hydraulic Research/De Recherches Hydrauliques, 2011, 49, 554-561.	0.7	18
65	A shallow-water sloshing model for wave breaking in rectangular tanks. Journal of Fluid Mechanics, 2014, 746, 437-465.	1.4	18
66	Modeling and Analysis of an Electrically Actuated Microbeam Based on Nonclassical Beam Theory. Journal of Computational and Nonlinear Dynamics, 2014, 9, .	0.7	18
67	A wave-by-wave analysis for the evaluation of the breaking-wave celerity. Applied Ocean Research, 2014, 46, 15-27.	1.8	18
68	Numerical Modeling of Flow and Bed Evolution of Bichromatic Wave Groups on an Intermediate Beach Using Nonhydrostatic XBeach. Journal of Waterway, Port, Coastal and Ocean Engineering, 2020, 146, .	0.5	18
69	Turbulence in Rivers. GeoPlanet: Earth and Planetary Sciences, 2015, , 51-78.	0.2	18
70	Integral flow properties of the swash zone and averaging. Part 2. Shoreline boundary conditions for wave-averaged models. Journal of Fluid Mechanics, 2002, 458, 269-281.	1.4	17
71	Topographically controlled, breaking-wave-induced macrovortices. Part 3. The mixing features. Journal of Fluid Mechanics, 2006, 559, 81.	1.4	17
72	Monitoring for Coastal Resilience: Preliminary Data from Five Italian Sandy Beaches. Sensors, 2019, 19, 1854.	2.1	17

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73	Waveâ€forced dynamics in the nearshore river mouths, and swash zones. Earth Surface Processes and Landforms, 2020, 45, 75-95.	1.2	17
74	Eulerian and Lagrangian aspects of the longshore drift in the surf and swash zones. Journal of Geophysical Research, 1997, 102, 23155-23168.	3.3	16
75	Macrovortices-induced horizontal mixing in compound channels. Ocean Dynamics, 2004, 54, 333.	0.9	16
76	Fluidâ€“particle interaction and generation of coherent structures over permeable beds: an experimental analysis. Advances in Water Resources, 2014, 72, 97-109.	1.7	16
77	Assessing the Hydro-Morphodynamic Response of a Beach Protected by Detached, Impermeable, Submerged Breakwaters: A Numerical Approach. Journal of Coastal Research, 2016, 32, 590.	0.1	16
78	Sandbar dynamics in microtidal environments: Migration patterns in unprotected and bounded beaches. Coastal Engineering, 2020, 161, 103768.	1.7	16
79	Normalized Scalar Product Approach for Nearshore Bathymetric Estimation From X-Band Radar Images: An Assessment Based on Simulated and Measured Data. IEEE Journal of Oceanic Engineering, 2018, 43, 221-237.	2.1	15
80	Effects of stiffness and configuration of brace-viscous damper systems on the response mitigation of offshore jacket platforms. Applied Ocean Research, 2021, 107, 102482.	1.8	14
81	Sea waves and mass transport on a sloping beach. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2002, 458, 2053-2082.	1.0	13
82	Experimental validation and characterization of mean swash zone boundary conditions. Journal of Geophysical Research, 2003, 108, .	3.3	13
83	Dispersive nonlinear shallow-water equations: some preliminary numerical results. Journal of Engineering Mathematics, 2010, 67, 71-84.	0.6	13
84	Bore-generated macrovortices on erodible beds. Journal of Fluid Mechanics, 2013, 734, 486-508.	1.4	13
85	Snow avalanches striking water basins: behaviour of the avalancheâ€™s centre of mass and front. Natural Hazards, 2017, 88, 1297-1323.	1.6	13
86	Wave-induced morphodynamics and sediment transport around a slender vertical cylinder. Advances in Water Resources, 2019, 129, 263-280.	1.7	12
87	Fluid dynamics in the functional foregut of xylem-sap feeding insects: A comparative study of two Xylella fastidiosa vectors. Journal of Insect Physiology, 2020, 120, 103995.	0.9	12
88	The early stages of shallow flows in an inclined flume. Journal of Fluid Mechanics, 2009, 633, 285-309.	1.4	11
89	Working of Defense Coastal Structures Dissipating by Macroroughness. Journal of Waterway, Port, Coastal and Ocean Engineering, 2010, 136, 79-90.	0.5	11
90	Nearshore bar migration and sediment-induced buoyancy effects. Continental Shelf Research, 2010, 30, 226-238.	0.9	11

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91	Whole-wavelength description of a wave boundary layer over permeable wall. Experiments in Fluids, 2015, 56, 1.	1.1	11
92	Summertime conditions of a muddy estuarine environment: the EsCoSed project contribution. Water Science and Technology, 2015, 71, 1451-1457.	1.2	11
93	A depth semi-averaged model for coastal dynamics. Physics of Fluids, 2017, 29, .	1.6	11
94	An assessment of the roller approach for wave breaking in a hybrid finite-volume finite-difference Boussinesq-type model for the surf-zone. Applied Ocean Research, 2018, 73, 160-178.	1.8	11
95	Linear depth inversion sensitivity to wave viewing angle using synthetic optical video. Coastal Engineering, 2019, 152, 103535.	1.7	11
96	Modeling of the Wave Setup Inshore of an Array of Submerged Breakwaters. Journal of Waterway, Port, Coastal and Ocean Engineering, 2009, 135, 38-51.	0.5	10
97	Vorticity generation due to cross-sea. Journal of Fluid Mechanics, 2014, 744, 286-309.	1.4	10
98	Wave-induced vortex generation around a slender vertical cylinder. Physics of Fluids, 2020, 32, .	1.6	10
99	Swash zone response under various wave regimes. Journal of Hydraulic Research/De Recherches Hydrauliques, 2011, 49, 55-63.	0.7	9
100	Wave-Current Interactions and Infragravity Wave Propagation at a Microtidal Inlet. Proceedings (mdpi), 2018, 2, .	0.2	9
101	The run-up of weakly-two-dimensional solitary pulses. Nonlinear Processes in Geophysics, 1998, 5, 27-38.	0.6	8
102	A note on the decay of vorticity in shallow flow calculations. Physics of Fluids, 2004, 16, 2469-2475.	1.6	8
103	Integral swash-zone models. Continental Shelf Research, 2006, 26, 653-660.	0.9	8
104	Integral properties of the swash zone and averaging. Part 3. Longshore shoreline boundary conditions for wave-averaged nearshore circulation models. Journal of Fluid Mechanics, 2007, 573, 399-415.	1.4	8
105	Use of numerical models to study land-based sedimentation and subsequent nearshore morphological evolution. Coastal Engineering, 2008, 55, 601-621.	1.7	8
106	Wave attenuation over porous seabeds: A numerical study. Ocean Modelling, 2017, 117, 28-40.	1.0	8
107	Swash zone boundary conditions for long-wave models. Coastal Engineering, 2005, 52, 971-976.	1.7	7
108	A dissipative point-vortex model for nearshore circulation. Journal of Fluid Mechanics, 2007, 589, 455-478.	1.4	7

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109	Dispersive effects on wave-current interaction and vorticity transport in nearshore flows. Physics of Fluids, 2008, 20, .	1.6	7
110	Analysis of the Nonlinear Shallow Water Equations Over Nonplanar Topography. Studies in Applied Mathematics, 2010, 124, 85-103.	1.1	7
111	THE MORPHOLOGICAL RESPONSE OF BEACHES PROTECTED BY DIFFERENT BREAKWATER CONFIGURATIONS. Coastal Engineering Proceedings, 2012, 1, 52.	0.1	7
112	Topographically-induced enstrophy production/dissipation in coastal models. Physics of Fluids, 2006, 18, 126603.	1.6	6
113	Waves and Currents at a River Mouth: The Role of Macrovortices, Sub-Grid Turbulence and Seabed Friction. Water (Switzerland), 2018, 10, 550.	1.2	6
114	Flooding Pedestriansâ€™ Evacuation in Historical Urban Scenario: A Tool for Risk Assessment Including Human Behaviors. RILEM Bookseries, 2019, , 1152-1161.	0.2	6
115	Long waves approaching the coast: Greenâ€™s law generalization. Journal of Ocean Engineering and Marine Energy, 2019, 5, 385-402.	0.9	6
116	On a layer model for spilling breakers: A preliminary experimental analysis. European Journal of Mechanics, B/Fluids, 2019, 73, 24-47.	1.2	6
117	Swash Zone Dynamics due to Impulsive Waves. Journal of Waterway, Port, Coastal and Ocean Engineering, 2011, 137, 192-203.	0.5	5
118	Long-term evolution of an inner bar at the mouth of a microtidal river. Estuarine, Coastal and Shelf Science, 2021, 262, 107573.	0.9	5
119	Waveâ€•and Tideâ€Induced Infragravity Dynamics at an Intermediateâ€Toâ€Dissipative Microtidal Beach. Journal of Geophysical Research: Oceans, 2022, 127, .	1.0	5
120	Preliminary Results on the Dynamics of a Pile-Moored Fish Cage with Elastic Net in Currents and Waves. Journal of Marine Science and Engineering, 2021, 9, 14.	1.2	4
121	Hydroelastic behaviour of a structure exposed to an underwater explosion. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140103.	1.6	3
122	Investigation of the Dynamic Loads on a Vertically Oscillating Circular Cylinder Close to the Sea Bed: The Role of Viscosity. Journal of Offshore Mechanics and Arctic Engineering, 2017, 139, .	0.6	3
123	Extra Strain Rates in an unsteady spilling breaking wave. Scientific Reports, 2018, 8, 13926.	1.6	3
124	Novel free surface boundary conditions for spilling breaking waves. Coastal Engineering, 2020, 159, 103717.	1.7	3
125	STRUCTURE-GENERATED MACROVORTICES AND THEIR EVOLUTION IN VERY SHALLOW DEPTHS. , 2003, , .		3
126	Interaction between breaking-induced vortices and near-bed structures. Part 1. Experimental and theoretical investigation. Journal of Fluid Mechanics, 2022, 940, .	1.4	3

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127	The modelling of short waves in shallow waters and in the surf zone. Il Nuovo Cimento Della SocietÃ Italiana Di Fisica C, 1994, 17, 549-564.	0.2	1
128	Pipe-Soil Interaction: An Evaluation of a Numerical Model. , 2007, , 259.		1
129	A natural-scale study of cohesive sediment transport: The Misa River case. , 2014, , 843-850.		1
130	Gas cavityâ€"body interactions: Efficient numerical solution. Computers and Fluids, 2015, 113, 14-19.	1.3	1
131	Sensors for Coastal Monitoring. Journal of Sensors, 2016, 2016, 1-2.	0.6	1
132	Monitoring for Coastal Resilience: A Project for Five Italian Beaches. , 2018, , .		1
133	Upstream Propagating Long-Wave Modes at a Microtidal River Mouth. Environmental Sciences Proceedings, 2020, 2, 15.	0.3	1
134	Wave-resolving shoreline boundary conditions for wave-averaged coastal models. Ocean Modelling, 2020, 153, 101661.	1.0	1
135	A Semiâ€Empirical Approach for Tsunami Inundation: An Application to the Coasts of South Italy. Geophysical Research Letters, 2022, 49, .	1.5	1
136	The Equations for Integral and Mean Flow Properties in the Swash Zone. , 1997, , 4134.		0
137	The Modelling of a Spilling Breaker: Strong Turbulence at a Free Surface. , 1999, , 72.		0
138	Examining the Contribution of Sediment Stratification to the Evolutionof Seabed Morphology. , 2007, , .		0
139	Scouring Below Pipelines: The Role of Vorticity and Turbulence. , 2010, , .		0
140	INFLUENCE OF SWASH ZONE MORPHOLOGY ON OFFSHORE BAR MIGRATION. , 2011, , .		0
141	Dynamics of a Micro Electrical Mechanical System Subject to Thermoelastic and Squeeze-Film Damping. MATEC Web of Conferences, 2012, 1, 04004.	0.1	0
142	A Novel Two-fluid Model for the Identification of Possible Multiple Solutions in Slightly Inclined Pipelines. International Journal of Nonlinear Sciences and Numerical Simulation, 2013, 14, 45-59.	0.4	0
143	Advances in fluid mechanics for offshore engineering: a modelling perspective. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140115.	1.6	0
144	60th Anniversary Special Issue on Significant Advances in Coastal Engineering. Journal of Waterway, Port, Coastal and Ocean Engineering, 2016, 142, 02016001.	0.5	0

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145	Shock trains on a planar beach: quasi-analytical and fully numerical solutions. Natural Hazards, 2016, 84, 621-635.	1.6	0
146	FLOW DYNAMICS OF WAVES PROPAGATING OVER DIFFERENT PERMEABLE BEDS. Coastal Engineering Proceedings, 2017, , 35.	0.1	0
147	Experimental Setup for the Validation of the Bio-Inspired Thruster of an Ostraciiform Swimming Robot. , 2018, , .		0
148	An analytical description of the energy balance in turbulent, round, free jets. AIP Advances, 2020, 10, 075218.	0.6	0
149	Wave-Forced Dynamics at Microtidal River Mouths. , 0, , .		0
150	ON SWASH ZONE BOUNDARY CONDITIONS FOR WAVE-AVERAGED MODELS. , 2003, , .		0
151	Research and Engineering for Resilient Infrastructures and Environment Protection. , 2019, , 311-324.		0
152	Sustainable Engineering for Resilient Built and Natural Environments. , 2019, , 297-310.		0