Miguel Onorato

List of Publications by Year
in descending order

146 papers	8,457 citations	41344 49 h-index	46799 89 g-index
150 all docs	150 docs citations	150 times ranked	3213 citing authors

#	Article	IF	Citations
1	Rogue waves and their generating mechanisms in different physical contexts. Physics Reports, 2013, 528, 47-89.	25.6	885
2	Freak Waves in Random Oceanic Sea States. Physical Review Letters, 2001, 86, 5831-5834.	7.8	469
3	Wave modelling â€“ The state of the art. Progress in Oceanography, 2007, 75, 603-674.	3.2	425
4	The nonlinear dynamics of rogue waves and holes in deep-water gravity wave trains. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 275, 386-393.	2.1	326
5	Vector Rogue Waves and Baseband Modulation Instability in the Defocusing Regime. Physical Review Letters, 2014, 113, 034101.	7.8	302
6	Modulational Instability in Crossing Sea States: A Possible Mechanism for the Formation of Freak Waves. Physical Review Letters, 2006, 96, 014503.	7.8	281
7	Statistical Properties of Directional Ocean Waves: The Role of the Modulational Instability in the Formation of Extreme Events. Physical Review Letters, 2009, 102, 114502.	7.8	206
8	Super Rogue Waves: Observation of a Higher-Order Breather in Water Waves. Physical Review X, 2012, 2, .	8.9	199
9	Extreme waves, modulational instability and second order theory: wave flume experiments on irregular waves. European Journal of Mechanics, B/Fluids, 2006, 25, 586-601.	2.5	198
10	Observation of a hierarchy of up to fifth-order rogue waves in a water tank. Physical Review E, 2012, 86, 056601.	2.1	172
11	Statistical properties of mechanically generated surface gravity waves: a laboratory experiment in a three-dimensional wave basin. Journal of Fluid Mechanics, 2009, 627, 235-257.	3.4	170
12	Observation of strongly non-Gaussian statistics for random sea surface gravity waves in wave flume experiments. Physical Review E, 2004, 70, 067302.	2.1	143
13	Evolution of weakly nonlinear random directional waves: laboratory experiments and numerical simulations. Journal of Fluid Mechanics, 2010, 664, 313-336.	3.4	143
14	Triggering Rogue Waves in Opposing Currents. Physical Review Letters, 2011, 107, 184502.	7.8	131
15	Extreme wave events in directional, random oceanic sea states. Physics of Fluids, 2002, 14, L25-L28.	4.0	126
16	On the Estimation of the Kurtosis in Directional Sea States for Freak Wave Forecasting. Journal of Physical Oceanography, 2011, 41, 1484-1497.	1.7	124
17	Modulational instability and non-Gaussian statistics in experimental random water-wave trains. Physics of Fluids, 2005, 17, 078101.	4.0	117
18	Unsteady behavior of back-facing step flow. Experiments in Fluids, 2001, 30, 551-561.	2.4	116

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19	Modulation Instability and Phase-Shifted Fermi-Pasta-Ulam Recurrence. Scientific Reports, 2016, 6, 28516.	3.3	112
20	Rogue Waves: From Nonlinear SchrÃ¶dinger Breather Solutions to Sea-Keeping Test. PLoS ONE, 2013, 8, e54629.	2.5	110
21	Route to thermalization in the Î± -Fermiâ€“Pastaâ€“Ulam system. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 4208-4213.	7.1	105
22	Rogue waves â€“ towards a unifying concept?: Discussions and debates. European Physical Journal: Special Topics, 2010, 185, 5-15.	2.6	100
23	The Intermediate Water Depth Limit of the Zakharov Equation and Consequences for Wave Prediction. Journal of Physical Oceanography, 2007, 37, 2389-2400.	1.7	98
24	Rogue waves in crossing seas: The Louis Majesty accident. Journal of Geophysical Research, 2012, 117, .	3.3	93
25	Maximum steepness of oceanic waves: Field and laboratory experiments. Geophysical Research Letters, 2010, 37, .	4.0	90
26	Wave turbulence and vortices in Boseâ€“Einstein condensation. Physica D: Nonlinear Phenomena, 2006, 219, 1-12.	2.8	87
27	Experimental Observation of Dark Solitons on the Surface of Water. Physical Review Letters, 2013, 110, 124101.	7.8	87
28	Freely Decaying Weak Turbulence for Sea Surface Gravity Waves. Physical Review Letters, 2002, 89, 144501.	7.8	85
29	On the extreme statistics of longâ€crested deep water waves: Theory and experiments. Journal of Geophysical Research, 2007, 112, .	3.3	80
30	Extreme waves in random crossing seas: Laboratory experiments and numerical simulations. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	80
31	Vortex knots in a Bose-Einstein condensate. Physical Review E, 2012, 85, 036306.	2.1	76
32	The nonlinear SchrÃ¶dinger equation and the propagation of weakly nonlinear waves in optical fibers and on the water surface. Annals of Physics, 2015, 361, 490-500.	2.8	75
33	Small scale intermittency and bursting in a turbulent channel flow. Physical Review E, 2000, 61, 1447-1454.	2.1	70
34	Wave crest and trough distributions in a broad-banded directional wave field. Ocean Engineering, 2008, 35, 1784-1792.	4.3	69
35	Intermittency in Integrable Turbulence. Physical Review Letters, 2014, 113, 113902.	7.8	68
36	Approximate rogue wave solutions of the forced and damped nonlinear SchrÃ¶dinger equation for water waves. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 3057-3059.	2.1	67

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37	Super-rogue waves in simulations based on weakly nonlinear and fully nonlinear hydrodynamic equations. Physical Review E, 2013, 88, 012909.	2.1	65
38	Surface gravity waves from direct numerical simulations of the Euler equations: A comparison with second-order theory. Ocean Engineering, 2008, 35, 367-379.	4.3	64
39	Freak waves in crossing seas. European Physical Journal: Special Topics, 2010, 185, 45-55.	2.6	60
40	Wind Generated Rogue Waves in an Annular Wave Flume. Physical Review Letters, 2017, 118, 144503.	7.8	60
41	Effects of an Explosive Polar Cyclone Crossing the Antarctic Marginal Ice Zone. Geophysical Research Letters, 2019, 46, 5948-5958.	4.0	59
42	Excitation of rogue waves in a variable medium: An experimental study on the interaction of water waves and currents. Physical Review E, 2013, 87, 051201.	2.1	58
43	Rogue waves in opposing currents: an experimental study on deterministic and stochastic wave trains. Journal of Fluid Mechanics, 2015, 769, 277-297.	3.4	58
44	Hydrodynamic Supercontinuum. Physical Review Letters, 2013, 111, 054104.	7.8	57
45	Quantum turbulence cascades in the Gross-Pitaevskii model. Physical Review A, 2009, 80, .	2.5	56
46	Turbulence and internal waves in stably-stratified channel flow with temperature-dependent fluid properties. Journal of Fluid Mechanics, 2012, 697, 175-203.	3.4	53
47	Freely decaying Turbulence and Boseâ€“Einstein Condensation in Grossâ€“Pitaevski Model. Journal of Low Temperature Physics, 2007, 146, 31-46.	1.4	51
48	Experimental Observation and Theoretical Description of Multisoliton Fission in Shallow Water. Physical Review Letters, 2016, 117, 144102.	7.8	51
49	Experimental Evidence of a Hydrodynamic Soliton Gas. Physical Review Letters, 2019, 122, 214502.	7.8	51
50	The effect of third-order nonlinearity on statistical properties of random directional waves in finite depth. Nonlinear Processes in Geophysics, 2009, 16, 131-139.	1.3	50
51	Simulations and experiments of short intense envelope solitons of surface water waves. Physics of Fluids, 2013, 25, .	4.0	50
52	Landau damping and coherent structures in narrow-banded1+1deep water gravity waves. Physical Review E, 2003, 67, 046305.	2.1	49
53	Modulational Instability, Wave Breaking, and Formation of Large-Scale Dipoles in the Atmosphere. Physical Review Letters, 2013, 110, 184504.	7.8	49
54	Wave statistics in unimodal and bimodal seas from a second-order model. European Journal of Mechanics, B/Fluids, 2006, 25, 649-661.	2.5	47

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55	Double Scaling in the Relaxation Time in the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î²</mml:mi></mml:math> -Fermi-Pasta-Ulam-Tsingou Model. Physical Review Letters, 2018, 120, 144301.	7.8	45
56	Observation of dispersive shock waves developing from initial depressions in shallow water. Physica D: Nonlinear Phenomena, 2016, 333, 276-284.	2.8	44
57	Brief communication: Pancake ice floe size distribution during the winter expansion of the Antarctic marginal ice zone. Cryosphere, 2019, 13, 41-48.	3.9	44
58	Second-Order Theory and Setup in Surface Gravity Waves: A Comparison with Experimental Data. Journal of Physical Oceanography, 2007, 37, 2726-2739.	1.7	43
59	Development of a bimodal structure in ocean wave spectra. Journal of Geophysical Research, 2010, 115, .	3.3	40
60	Stokes drift for inertial particles transported by water waves. Europhysics Letters, 2013, 102, 14003.	2.0	40
61	Experimental Evidence of Hydrodynamic Instantons: The Universal Route to Rogue Waves. Physical Review X, 2019, 9, .	8.9	40
62	Nonlinear random optical waves: Integrable turbulence, rogue waves and intermittency. Physica D: Nonlinear Phenomena, 2016, 333, 323-335.	2.8	39
63	Experimental evidence of the modulation of a plane wave to oblique perturbations and generation of rogue waves in finite water depth. Physics of Fluids, 2013, 25, .	4.0	36
64	â€œExtraordinaryâ€•modulation instability in optics and hydrodynamics. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	36
65	Bose-Einstein condensation and Berezinskii-Kosterlitz-Thouless transition in the two-dimensional nonlinear SchrÃ¶dinger model. Physical Review A, 2014, 90, .	2.5	35
66	Growth and spectra of gravityâ€“capillary waves in countercurrent air/water turbulent flow. Journal of Fluid Mechanics, 2015, 777, 245-259.	3.4	35
67	Occurrence of extreme waves in three-dimensional mechanically generated wave fields propagating over an oblique current. Natural Hazards and Earth System Sciences, 2011, 11, 895-903.	3.6	34
68	Drift of Pancake Ice Floes in the Winter Antarctic Marginal Ice Zone During Polar Cyclones. Journal of Geophysical Research: Oceans, 2020, 125, e2019JC015418.	2.6	34
69	Surface waves and waveâ€coupled effects in lower atmosphere and upper ocean. Journal of Geophysical Research, 2012, 117, .	3.3	32
70	Sustained turbulence in the three-dimensional Grossâ€“Pitaevskii model. Physica D: Nonlinear Phenomena, 2012, 241, 304-314.	2.8	32
71	Spontaneous emergence of rogue waves in partially coherent waves: A quantitative experimental comparison between hydrodynamics and optics. Physical Review E, 2018, 97, 012208.	2.1	32
72	On the Deterministic Prediction of Water Waves. Fluids, 2020, 5, 9.	1.7	32

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73	Rogue waves: a unique approach to multidisciplinary physics. Contemporary Physics, 2017, 58, 53-69.	1.8	31
74	Landau damping of partially incoherent Langmuir waves. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 303, 61-66.	2.1	29
75	On the origin of heavy-tail statistics in equations of the Nonlinear SchrÃ¶dinger type. Physics Letters, Section A: General, Atomic and Solid State Physics, 2016, 380, 3173-3177.	2.1	28
76	Peregrine breathers as design waves for wave-structure interaction. Ocean Engineering, 2016, 128, 199-212.	4.3	27
77	Spatiotemporal optical dark X solitary waves. Optics Letters, 2016, 41, 5571.	3.3	25
78	Thermalization in the discrete nonlinear Klein-Gordon chain in the wave-turbulence framework. Europhysics Letters, 2018, 121, 44003.	2.0	24
79	Four-wave resonant interactions in the classical quadratic Boussinesq equations. Journal of Fluid Mechanics, 2009, 618, 263-277.	3.4	22
80	Modelling of the spatial evolution of extreme laboratory wave Heights with the nonlinear SchrÃ¶dinger and Dysthe equations. Ocean Engineering, 2014, 89, 1-9.	4.3	22
81	Twenty years of progresses in oceanic rogue waves: the role played by weakly nonlinear models. Natural Hazards, 2016, 84, 541-548.	3.4	22
82	Universal route to thermalization in weakly-nonlinear one-dimensional chains. Mathematics in Engineering, 2019, 1, 672-698.	0.9	22
83	Predicting ocean rogue waves from point measurements: An experimental study for unidirectional waves. Physical Review E, 2019, 99, 032201.	2.1	21
84	On the relation between two numerical methods for the computation of random surface gravity waves. European Journal of Mechanics, B/Fluids, 2007, 26, 43-48.	2.5	20
85	Modulational instability and wave amplification in finite water depth. Natural Hazards and Earth System Sciences, 2014, 14, 705-711.	3.6	20
86	Soliton Creation and Destruction, Resonant Interactions, and Inelastic Collisions in Shallow Water Waves. Physical Review Letters, 1998, 81, 3559-3562.	7.8	19
87	Interaction of two quasi-monochromatic waves in shallow water. Physics of Fluids, 2003, 15, 3871-3874.	4.0	19
88	Torus quantum vortex knots in the Gross-Pitaevskii model for Bose-Einstein condensates. Journal of Physics: Conference Series, 2014, 544, 012022.	0.4	19
89	Modeling of oceanâ€“atmosphere interaction phenomena during the breaking of modulated wave trains. Journal of Computational Physics, 2014, 271, 151-171.	3.8	17
90	Directional soliton and breather beams. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 9759-9763.	7.1	17

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91	Modeling extreme wave heights from laboratory experiments with the nonlinear SchrÃ¶dinger equation. Natural Hazards and Earth System Sciences, 2014, 14, 959-968.	3.6	16
92	Gray solitons on the surface of water. Physical Review E, 2014, 89, 011002.	2.1	16
93	Exact discrete resonances in the Fermi-Pasta-Ulamâ€“Tsingou system. Communications in Nonlinear Science and Numerical Simulation, 2019, 73, 437-471.	3.3	16
94	Formation of Extraordinarily High Waves in Space and Time. , 2011, , .		15
95	Modelling of the spatial evolution of extreme laboratory wave crest and trough heights with the NLS-type equations. Applied Ocean Research, 2015, 52, 140-150.	4.1	14
96	Wave turbulence and intermittency in directional wave fields. Wave Motion, 2018, 83, 94-101.	2.0	14
97	Observation of turbulence and intermittency in wave-induced oscillatory flows. Wave Motion, 2019, 84, 81-89.	2.0	13
98	Coexistence of Ballistic and Fourier Regimes in the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î²</mml:mi></mml:math> Fermi-Pasta-Ulam-Tsingou Lattice. Physical Review Letters, 2020, 125, 024101.	7.8	13
99	Weak versus strong wave turbulence in the Majda-McLaughlin-Tabak model. Physical Review Fluids, 2017, 2, .	2.5	12
100	Starting Flow Past an Airfoil and its Acquired Lift in a Superfluid. Physical Review Letters, 2019, 123, 154502.	7.8	11
101	Fourier amplitude distribution and intermittency in mechanically generated surface gravity waves. Physical Review E, 2020, 102, 013106.	2.1	11
102	Modelling of the temporal and spatial evolutions of weakly nonlinear random directional waves with the modified nonlinear SchrÃ¶dinger equations. Applied Ocean Research, 2016, 55, 130-140.	4.1	10
103	Envelope solitons induced by high-order effects of light-plasma interaction. European Physical Journal B, 2002, 29, 613-618.	1.5	9
104	Optical-fluid dark line and X solitary waves in Kerr media. Optical Data Processing and Storage, 2017, 3, 1-7.	3.3	8
105	Observation of a giant nonlinear wave-packet on the surface of the ocean. Scientific Reports, 2021, 11, 23606.	3.3	8
106	Application of Breather Solutions for the Investigation of Wave/Structure Interaction in High Steep Waves. , 2012, , .		7
107	Warm cascade states in a forced-dissipated Boltzmann gas of hard spheres. Physica D: Nonlinear Phenomena, 2012, 241, 600-615.	2.8	7
108	Decay of gravity-capillary waves in air/water sheared turbulence. International Journal of Heat and Fluid Flow, 2016, 61, 137-144.	2.4	7

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109	Hydrodynamic X Waves. Physical Review Letters, 2019, 123, 184501.	7.8	7
110	A straightforward derivation of the four-wave kinetic equation in action-angle variables. Journal of Physics Communications, 2020, 4, 095016.	1.2	6
111	Five-wave classical scattering matrix and integrable equations. Theoretical and Mathematical Physics(Russian Federation), 2014, 180, 759-764.	0.9	5
112	Comparison of Distributions of Wave Heights From Nonlinear SchrÃ¶dinger Equation Simulations and Laboratory Experiments. Journal of Offshore Mechanics and Arctic Engineering, 2015, 137, .	1.2	5
113	Multifractality of Air Transmittency at Small Time Scales. Fractals, 1998, 06, 159-170.	3.7	4
114	Probability density function and â€œplusâ€•and â€œminusâ€•structure functions in a turbulent channel flow. Physical Review E, 2001, 63, 025302.	2.1	4
115	Comparison of Distributions of Wave Heights From Nonlinear SchrÃ¶dinger Equation Simulations and Laboratory Experiments. , 2013, , .		4
116	Hydrodynamic and Optical Waves: A Common Approach for Unidimensional Propagation. Lecture Notes in Physics, 2016, , 1-22.	0.7	4
117	On Natural Modulational Bandwidth of Deep-Water Surface Waves. Fluids, 2019, 4, 67.	1.7	4
118	Experimental Realization of Periodic Deep-Water Wave Envelopes with and without Dissipation. Water Waves, 2020, 2, 113-122.	1.0	4
119	Analysis of Dangerous Sea States in the Northwestern Mediterranean Area. Journal of Marine Science and Engineering, 2021, 9, 422.	2.6	4
120	A note on an alternative derivation of the Benney equations for short waveâ€“long wave interactions. European Journal of Mechanics, B/Fluids, 2012, 34, 1-6.	2.5	3
121	Application of Higher Order Spectral Method for Deterministic Wave Forecast. , 2014, , .		3
122	Ring-type multisoliton dynamics in shallow water. Physical Review E, 2015, 91, 012921.	2.1	3
123	Hydrodynamic Envelope Solitons and Breathers. Lecture Notes in Physics, 2016, , 55-87.	0.7	3
124	Statistics of Wave Orbital Velocity in Deep Water Random Directional Wave Fields. , 2012, , .		3
125	Investigation of Nonlinear Waveâ€“Ice Interaction Using Parameter Study and Numerical Simulation. Journal of Offshore Mechanics and Arctic Engineering, 2020, 142, .	1.2	3
126	Phase-suppressed hydrodynamics of solitons on constant-background plane wave. Physical Review Fluids, 2020, 5, .	2.5	3

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127	Equilibrium and nonequilibrium description of negative temperature states in a one-dimensional lattice using a wave kinetic approach. Physical Review E, 2022, 105, 014206.	2.1	3
128	Directional Effects on Freak Wave Prediction. Proceedings of Coastal Engineering Jsce, 2007, 54, 96-100.	0.1	2
129	Warm turbulence in the Boltzmann equation. Europhysics Letters, 2011, 96, 24004.	2.0	2
130	Non-Gaussian Properties of Shallow Water Waves in Crossing Seas. , 2008, , 53-69.		2
131	Occurrence of Extreme Waves in Finite Water Depth. , 2016, , 45-62.		2
132	Extreme Waves in Sea States Crossing an Oblique Current. , 2010, , .		2
133	Hydroelastic potential flow solver suited for nonlinear wave dynamics in ice-covered waters. Ocean Engineering, 2022, 259, 111756.	4.3	2
134	Non-normal stability analysis of a shear current under surface gravity waves. Journal of Fluid Mechanics, 2008, 609, 49-58.	3.4	1
135	Ring localized structures in nonlinear shallow water wave dynamics. Journal of Physics: Conference Series, 2014, 482, 012030.	0.4	1
136	Anomalous Correlators in Nonlinear Dispersive Wave Systems. Physical Review X, 2020, 10, .	8.9	1
137	Intermittency and nongaussian statistics of air transmittency fluctuations. Physics and Chemistry of the Earth, 1999, 24, 953-957.	0.3	0
138	ç•°å„æ³¢æµªäºˆæ¸¬ãƒ¢ãƒ‡ãƒ«ãŽ¨å®šç²¾åº¦ã«ãŠã‚ã¼ã¼. Proceedings of Coastal Engineering Jsce, 2006, 53, 306-310.	0.1	0
139	Vector Rogue Waves and Modulation Instability in the Defocusing Regime. , 2014, , .		0
140	Rogue Waves in Wind Seas: An Experimental Model in an Annular Wind-Wave Flume. , 2017, , .		0
141	nlchains: A fast and accurate time integration of 1-D nonlinear chains on GPUs. SoftwareX, 2019, 10, 100255.	2.6	0
142	NON-GAUSSIAN PROPERTIES OF SURFACE ELEVATION IN CROSSING SEA STATES IN SHALLOW WATER. , 2007, , .		0
143	Statistical Properties of a Directional Wave Field: Direct Simulations of the Euler Equations and Second-Order Theory. , 2008, , .		0
144	ASSESSING THE EFFECT OF FINITE WATER DEPTH ON THE OCCURRENCE OF EXTREME WAVES USING A DIRECT NUMERICAL SIMULATION METHOD. , 2009, , .		0

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145	DIRECTIONAL EFFECTS ON FREAK WAVE PREDICTION. , 2009, , .		0
146	Intermittency in integrable turbulence. , 2014, , .		0