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	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
2	Hydroelastic potential flow solver suited for nonlinear wave dynamics in ice-covered waters. Ocean Engineering, 2022, 259, 111756.	4.3	2
3	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
4	Analysis of Dangerous Sea States in the Northwestern Mediterranean Area. Journal of Marine Science and Engineering, 2021, 9, 422.	2.6	4
5	Observation of a giant nonlinear wave-packet on the surface of the ocean. Scientific Reports, 2021, 11, 23606.	3.3	8
6	Experimental Realization of Periodic Deep-Water Wave Envelopes with and without Dissipation. Water Waves, 2020, 2, 113-122.	1.0	4
7	Fourier amplitude distribution and intermittency in mechanically generated surface gravity waves. Physical Review E, 2020, 102, 013106.	2.1	11
8	Anomalous Correlators in Nonlinear Dispersive Wave Systems. Physical Review X, 2020, 10, .	8.9	1
9	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
10	On the Deterministic Prediction of Water Waves. Fluids, 2020, 5, 9.	1.7	32
11	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
12	Investigation of Nonlinear Waveâ€“Ice Interaction Using Parameter Study and Numerical Simulation. Journal of Offshore Mechanics and Arctic Engineering, 2020, 142, .	1.2	3
13	A straightforward derivation of the four-wave kinetic equation in action-angle variables. Journal of Physics Communications, 2020, 4, 095016.	1.2	6
14	Phase-suppressed hydrodynamics of solitons on constant-background plane wave. Physical Review Fluids, 2020, 5, .	2.5	3
15	nlchains: A fast and accurate time integration of 1-D nonlinear chains on GPUs. SoftwareX, 2019, 10, 100255.	2.6	0
16	Starting Flow Past an Airfoil and its Acquired Lift in a Superfluid. Physical Review Letters, 2019, 123, 154502.	7.8	11
17	Hydrodynamic X Waves. Physical Review Letters, 2019, 123, 184501.	7.8	7
18	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

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19	Experimental Evidence of a Hydrodynamic Soliton Gas. Physical Review Letters, 2019, 122, 214502.	7.8	51
20	Effects of an Explosive Polar Cyclone Crossing the Antarctic Marginal Ice Zone. Geophysical Research Letters, 2019, 46, 5948-5958.	4.0	59
21	On Natural Modulational Bandwidth of Deep-Water Surface Waves. Fluids, 2019, 4, 67.	1.7	4
22	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
23	Exact discrete resonances in the Fermi-Pasta-Ulamâ€“Tsingou system. Communications in Nonlinear Science and Numerical Simulation, 2019, 73, 437-471.	3.3	16
24	Predicting ocean rogue waves from point measurements: An experimental study for unidirectional waves. Physical Review E, 2019, 99, 032201.	2.1	21
25	Experimental Evidence of Hydrodynamic Instantons: The Universal Route to Rogue Waves. Physical Review X, 2019, 9, .	8.9	40
26	Observation of turbulence and intermittency in wave-induced oscillatory flows. Wave Motion, 2019, 84, 81-89.	2.0	13
27	Universal route to thermalization in weakly-nonlinear one-dimensional chains. Mathematics in Engineering, 2019, 1, 672-698.	0.9	22
28	Thermalization in the discrete nonlinear Klein-Gordon chain in the wave-turbulence framework. Europhysics Letters, 2018, 121, 44003.	2.0	24
29	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
30	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
31	Wave turbulence and intermittency in directional wave fields. Wave Motion, 2018, 83, 94-101.	2.0	14
32	Rogue Waves in Wind Seas: An Experimental Model in an Annular Wind-Wave Flume. , 2017, , .		0
33	Optical-fluid dark line and X solitary waves in Kerr media. Optical Data Processing and Storage, 2017, 3, 1-7.	3.3	8
34	Wind Generated Rogue Waves in an Annular Wave Flume. Physical Review Letters, 2017, 118, 144503.	7.8	60
35	Rogue waves: a unique approach to multidisciplinary physics. Contemporary Physics, 2017, 58, 53-69.	1.8	31
36	Weak versus strong wave turbulence in the Majda-McLaughlin-Tabak model. Physical Review Fluids, 2017, 2, .	2.5	12

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37	Nonlinear random optical waves: Integrable turbulence, rogue waves and intermittency. Physica D: Nonlinear Phenomena, 2016, 333, 323-335.	2.8	39
38	Decay of gravity-capillary waves in air/water sheared turbulence. International Journal of Heat and Fluid Flow, 2016, 61, 137-144.	2.4	7
39	Hydrodynamic and Optical Waves: A Common Approach for Unidimensional Propagation. Lecture Notes in Physics, 2016, , 1-22.	0.7	4
40	Hydrodynamic Envelope Solitons and Breathers. Lecture Notes in Physics, 2016, , 55-87.	0.7	3
41	Experimental Observation and Theoretical Description of Multisoliton Fission in Shallow Water. Physical Review Letters, 2016, 117, 144102.	7.8	51
42	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
43	Twenty years of progresses in oceanic rogue waves: the role played by weakly nonlinear models. Natural Hazards, 2016, 84, 541-548.	3.4	22
44	Peregrine breathers as design waves for wave-structure interaction. Ocean Engineering, 2016, 128, 199-212.	4.3	27
45	Modulation Instability and Phase-Shifted Fermi-Pasta-Ulam Recurrence. Scientific Reports, 2016, 6, 28516.	3.3	112
46	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
47	Observation of dispersive shock waves developing from initial depressions in shallow water. Physica D: Nonlinear Phenomena, 2016, 333, 276-284.	2.8	44
48	Occurrence of Extreme Waves in Finite Water Depth. , 2016, , 45-62.		2
49	Spatiotemporal optical dark X solitary waves. Optics Letters, 2016, 41, 5571.	3.3	25
50	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
51	Growth and spectra of gravityâ€“capillary waves in countercurrent air/water turbulent flow. Journal of Fluid Mechanics, 2015, 777, 245-259.	3.4	35
52	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
53	Comparison of Distributions of Wave Heights From Nonlinear SchrÃ¶edinger Equation Simulations and Laboratory Experiments. Journal of Offshore Mechanics and Arctic Engineering, 2015, 137, .	1.2	5
54	Ring-type multisoliton dynamics in shallow water. Physical Review E, 2015, 91, 012921.	2.1	3

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55	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
56	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
57	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
58	Modulational instability and wave amplification in finite water depth. Natural Hazards and Earth System Sciences, 2014, 14, 705-711.	3.6	20
59	Vector Rogue Waves and Modulation Instability in the Defocusing Regime. , 2014, , .		0
60	Intermittency in Integrable Turbulence. Physical Review Letters, 2014, 113, 113902.	7.8	68
61	Modeling of oceanâ€“atmosphere interaction phenomena during the breaking of modulated wave trains. Journal of Computational Physics, 2014, 271, 151-171.	3.8	17
62	Gray solitons on the surface of water. Physical Review E, 2014, 89, 011002.	2.1	16
63	Ring localized structures in nonlinear shallow water wave dynamics. Journal of Physics: Conference Series, 2014, 482, 012030.	0.4	1
64	Bose-Einstein condensation and Berezinskii-Kosterlitz-Thouless transition in the two-dimensional nonlinear SchrÃ¶dinger model. Physical Review A, 2014, 90, .	2.5	35
65	Vector Rogue Waves and Baseband Modulation Instability in the Defocusing Regime. Physical Review Letters, 2014, 113, 034101.	7.8	302
66	Five-wave classical scattering matrix and integrable equations. Theoretical and Mathematical Physics(Russian Federation), 2014, 180, 759-764.	0.9	5
67	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
68	Application of Higher Order Spectral Method for Deterministic Wave Forecast. , 2014, , .		3
69	Torus quantum vortex knots in the Gross-Pitaevskii model for Bose-Einstein condensates. Journal of Physics: Conference Series, 2014, 544, 012022.	0.4	19
70	Intermittency in integrable turbulence. , 2014, , .		0
71	Super-rogue waves in simulations based on weakly nonlinear and fully nonlinear hydrodynamic equations. Physical Review E, 2013, 88, 012909.	2.1	65
72	Hydrodynamic Supercontinuum. Physical Review Letters, 2013, 111, 054104.	7.8	57

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73	Experimental Observation of Dark Solitons on the Surface of Water. Physical Review Letters, 2013, 110, 124101.	7.8	87
74	Rogue waves and their generating mechanisms in different physical contexts. Physics Reports, 2013, 528, 47-89.	25.6	885
75	Modulational Instability, Wave Breaking, and Formation of Large-Scale Dipoles in the Atmosphere. Physical Review Letters, 2013, 110, 184504.	7.8	49
76	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
77	Simulations and experiments of short intense envelope solitons of surface water waves. Physics of Fluids, 2013, 25, .	4.0	50
78	Stokes drift for inertial particles transported by water waves. Europhysics Letters, 2013, 102, 14003.	2.0	40
79	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
80	Comparison of Distributions of Wave Heights From Nonlinear SchrÃ¶dinger Equation Simulations and Laboratory Experiments. , 2013, , .		4
81	Rogue Waves: From Nonlinear SchrÃ¶dinger Breather Solutions to Sea-Keeping Test. PLoS ONE, 2013, 8, e54629.	2.5	110
82	Application of Breather Solutions for the Investigation of Wave/Structure Interaction in High Steep Waves. , 2012, , .		7
83	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
84	Super Rogue Waves: Observation of a Higher-Order Breather in Water Waves. Physical Review X, 2012, 2, .	8.9	199
85	Observation of a hierarchy of up to fifth-order rogue waves in a water tank. Physical Review E, 2012, 86, 056601.	2.1	172
86	Warm cascade states in a forced-dissipated Boltzmann gas of hard spheres. Physica D: Nonlinear Phenomena, 2012, 241, 600-615.	2.8	7
87	Vortex knots in a Bose-Einstein condensate. Physical Review E, 2012, 85, 036306.	2.1	76
88	Rogue waves in crossing seas: The Louis Majesty accident. Journal of Geophysical Research, 2012, 117, .	3.3	93
89	Surface waves and waveâ€coupled effects in lower atmosphere and upper ocean. Journal of Geophysical Research, 2012, 117, .	3.3	32
90	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

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91	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
92	Sustained turbulence in the three-dimensional Grossâ€“Pitaevskii model. Physica D: Nonlinear Phenomena, 2012, 241, 304-314.	2.8	32
93	Statistics of Wave Orbital Velocity in Deep Water Random Directional Wave Fields. , 2012, , .		3
94	Extreme waves in random crossing seas: Laboratory experiments and numerical simulations. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	80
95	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
96	Triggering Rogue Waves in Opposing Currents. Physical Review Letters, 2011, 107, 184502.	7.8	131
97	Warm turbulence in the Boltzmann equation. Europhysics Letters, 2011, 96, 24004.	2.0	2
98	Formation of Extraordinarily High Waves in Space and Time. , 2011, , .		15
99	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
100	Evolution of weakly nonlinear random directional waves: laboratory experiments and numerical simulations. Journal of Fluid Mechanics, 2010, 664, 313-336.	3.4	143
101	Rogue waves â€“ towards a unifying concept?: Discussions and debates. European Physical Journal: Special Topics, 2010, 185, 5-15.	2.6	100
102	Freak waves in crossing seas. European Physical Journal: Special Topics, 2010, 185, 45-55.	2.6	60
103	Maximum steepness of oceanic waves: Field and laboratory experiments. Geophysical Research Letters, 2010, 37, .	4.0	90
104	Development of a bimodal structure in ocean wave spectra. Journal of Geophysical Research, 2010, 115, .	3.3	40
105	Extreme Waves in Sea States Crossing an Oblique Current. , 2010, , .		2
106	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
107	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
108	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

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109	Quantum turbulence cascades in the Gross-Pitaevskii model. Physical Review A, 2009, 80, .	2.5	56
110	Four-wave resonant interactions in the classical quadratic Boussinesq equations. Journal of Fluid Mechanics, 2009, 618, 263-277.	3.4	22
111	ASSESSING THE EFFECT OF FINITE WATER DEPTH ON THE OCCURRENCE OF EXTREME WAVES USING A DIRECT NUMERICAL SIMULATION METHOD. , 2009, , .		0
112	DIRECTIONAL EFFECTS ON FREAK WAVE PREDICTION. , 2009, , .		0
113	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
114	Wave crest and trough distributions in a broad-banded directional wave field. Ocean Engineering, 2008, 35, 1784-1792.	4.3	69
115	Non-normal stability analysis of a shear current under surface gravity waves. Journal of Fluid Mechanics, 2008, 609, 49-58.	3.4	1
116	Non-Gaussian Properties of Shallow Water Waves in Crossing Seas. , 2008, , 53-69.		2
117	Statistical Properties of a Directional Wave Field: Direct Simulations of the Euler Equations and Second-Order Theory. , 2008, , .		0
118	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
119	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
120	Directional Effects on Freak Wave Prediction. Proceedings of Coastal Engineering Jsce, 2007, 54, 96-100.	0.1	2
121	On the extreme statistics of longâ€crested deep water waves: Theory and experiments. Journal of Geophysical Research, 2007, 112, .	3.3	80
122	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
123	Wave modelling â€“ The state of the art. Progress in Oceanography, 2007, 75, 603-674.	3.2	425
124	Freely decaying Turbulence and Boseâ€“Einstein Condensation in Grossâ€“Pitaevski Model. Journal of Low Temperature Physics, 2007, 146, 31-46.	1.4	51
125	NON-GAUSSIAN PROPERTIES OF SURFACE ELEVATION IN CROSSING SEA STATES IN SHALLOW WATER. , 2007, , .		0
126	ç•°å„æ³¢æµªã®äº‹æ¸¬ã•ãã®æŽ¨å®šç²¾å¹¦ã«ã‚ã‚¦. Proceedings of Coastal Engineering Jsce, 2006, 53, 306-310.	0.1	0

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127	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
128	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
129	Wave turbulence and vortices in Boseâ€“Einstein condensation. Physica D: Nonlinear Phenomena, 2006, 219, 1-12.	2.8	87
130	Modulational Instability in Crossing Sea States: A Possible Mechanism for the Formation of Freak Waves. Physical Review Letters, 2006, 96, 014503.	7.8	281
131	Modulational instability and non-Gaussian statistics in experimental random water-wave trains. Physics of Fluids, 2005, 17, 078101.	4.0	117
132	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
133	Landau damping and coherent structures in narrow-banded1+1deep water gravity waves. Physical Review E, 2003, 67, 046305.	2.1	49
134	Interaction of two quasi-monochromatic waves in shallow water. Physics of Fluids, 2003, 15, 3871-3874.	4.0	19
135	Freely Decaying Weak Turbulence for Sea Surface Gravity Waves. Physical Review Letters, 2002, 89, 144501.	7.8	85
136	Extreme wave events in directional, random oceanic sea states. Physics of Fluids, 2002, 14, L25-L28.	4.0	126
137	Landau damping of partially incoherent Langmuir waves. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 303, 61-66.	2.1	29
138	Envelope solitons induced by high-order effects of light-plasma interaction. European Physical Journal B, 2002, 29, 613-618.	1.5	9
139	Freak Waves in Random Oceanic Sea States. Physical Review Letters, 2001, 86, 5831-5834.	7.8	469
140	Unsteady behavior of back-facing step flow. Experiments in Fluids, 2001, 30, 551-561.	2.4	116
141	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
142	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
143	Small scale intermittency and bursting in a turbulent channel flow. Physical Review E, 2000, 61, 1447-1454.	2.1	70
144	Intermittency and nongaussian statistics of air transmittency fluctuations. Physics and Chemistry of the Earth, 1999, 24, 953-957.	0.3	0

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145	Soliton Creation and Destruction, Resonant Interactions, and Inelastic Collisions in Shallow Water Waves. Physical Review Letters, 1998, 81, 3559-3562.	7.8	19
146	Multifractality of Air Transmittency at Small Time Scales. Fractals, 1998, 06, 159-170.	3.7	4