Denys Dutykh

List of Publications by Year
in descending order

135 papers	1,996 citations	236925 25 h-index	330143 37 g-index
144 all docs	144 docs citations	144 times ranked	1004 citing authors

#	Article	IF	Citations
1	Comparison between three-dimensional linear and nonlinear tsunami generation models. Theoretical and Computational Fluid Dynamics, 2007, 21, 245-269.	2.2	73
2	Finite volume schemes for dispersive wave propagation and runup. Journal of Computational Physics, 2011, 230, 3035-3061.	3.8	71
3	The Whitham Equation as a model for surface water waves. Physica D: Nonlinear Phenomena, 2015, 309, 99-107.	2.8	66
4	The VOLNA code for the numerical modeling of tsunami waves: Generation, propagation and inundation. European Journal of Mechanics, B/Fluids, 2011, 30, 598-615.	2.5	60
5	Numerical simulation of a solitonic gas in KdV and KdVâ€“BBM equations. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 3102-3110.	2.1	58
6	Finite volume and pseudo-spectral schemes for the fully nonlinear 1D Serre equations. European Journal of Applied Mathematics, 2013, 24, 761-787.	2.9	57
7	Linear theory of wave generation by a moving bottom. Comptes Rendus Mathematique, 2006, 343, 499-504.	0.3	52
8	Efficient computation of steady solitary gravity waves. Wave Motion, 2014, 51, 86-99.	2.0	50
9	Viscous potential free-surface flows in a fluid layer of finite depth. Comptes Rendus Mathematique, 2007, 345, 113-118.	0.3	49
10	On the Galerkin/Finite-Element Method for the Serre Equations. Journal of Scientific Computing, 2014, 61, 166-195.	2.3	46
11	Dissipative Boussinesq equations. Comptes Rendus - Mecanique, 2007, 335, 559-583.	2.1	45
12	Energy of tsunami waves generated by bottom motion. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 725-744.	2.1	43
13	Water waves generated by a moving bottom. , 2007, , 65-95.		40
14	Conservative modified Serreâ€“Greenâ€“Naghdi equations with improved dispersion characteristics. Communications in Nonlinear Science and Numerical Simulation, 2017, 45, 245-257.	3.3	40
15	Macroscopic dynamics of incoherent soliton ensembles: Soliton gas kinetics and direct numerical modelling. Europhysics Letters, 2016, 113, 30003.	2.0	38
16	Extreme wave runup on a vertical cliff. Geophysical Research Letters, 2013, 40, 3138-3143.	4.0	37
17	Practical use of variational principles for modeling water waves. Physica D: Nonlinear Phenomena, 2012, 241, 25-36.	2.8	35
18	Stable explicit schemes for simulation of nonlinear moisture transfer in porous materials. Journal of Building Performance Simulation, 2018, 11, 129-144.	2.0	35

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19	Visco-potential free-surface flows and long wave modelling. European Journal of Mechanics, B/Fluids, 2009, 28, 430-443.	2.5	34
20	Finite volume methods for unidirectional dispersive wave models. International Journal for Numerical Methods in Fluids, 2013, 71, 717-736.	1.6	33
21	Local Run-Up Amplification by Resonant Wave Interactions. Physical Review Letters, 2011, 107, 124502.	7.8	31
22	Fast accurate computation of the fully nonlinear solitary surface gravity waves. Computers and Fluids, 2013, 84, 35-38.	2.5	31
23	Tsunami generation by dynamic displacement of sea bed due to dip-slip faulting. Mathematics and Computers in Simulation, 2009, 80, 837-848.	4.4	29
24	Geometric numerical schemes for the KdV equation. Computational Mathematics and Mathematical Physics, 2013, 53, 221-236.	0.8	28
25	Nonlinear waves in networks: Model reduction for the sine-Gordon equation. Physical Review E, 2014, 90, 022912.	2.1	28
26	A two-fluid model for violent aerated flows. Computers and Fluids, 2010, 39, 283-293.	2.5	26
27	On the Modelling of Tsunami Generation and Tsunami Inundation. Procedia IUTAM, 2014, 10, 338-355.	1.2	26
28	Boussinesq modeling of surface waves due to underwater landslides. Nonlinear Processes in Geophysics, 2013, 20, 267-285.	1.3	25
29	On the contribution of the horizontal sea-bed displacements into the tsunami generation process. Ocean Modelling, 2012, 56, 43-56.	2.4	22
30	On the use of the finite fault solution for tsunami generation problems. Theoretical and Computational Fluid Dynamics, 2013, 27, 177-199.	2.2	22
31	On the Galilean Invariance of Some Nonlinear Dispersive Wave Equations. Studies in Applied Mathematics, 2013, 131, 359-388.	2.4	21
32	Accurate fast computation of steady two-dimensional surface gravity waves in arbitrary depth. Journal of Fluid Mechanics, 2018, 844, 491-518.	3.4	21
33	The Conformal-mapping Method for Surface Gravity Waves in the Presence of Variable Bathymetry and Mean Current. Procedia IUTAM, 2014, 11, 110-118.	1.2	20
34	The Whitham equation with surface tension. Nonlinear Dynamics, 2017, 88, 1125-1138.	5.2	19
35	Accurate numerical simulation of moisture front in porous material. Building and Environment, 2017, 118, 211-224.	6.9	19
36	Tsunami hazard assessment in the Makran subduction zone. Natural Hazards, 2020, 100, 861-875.	3.4	19

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37	Special solutions to a compact equation for deep-water gravity waves. Journal of Fluid Mechanics, 2012, 712, 646-660.	3.4	18
38	Long Wave Run-Up on Random Beaches. Physical Review Letters, 2011, 107, 184504.	7.8	16
39	Numerical Simulation of Wave Impact on a Rigid Wall Using a Twoâ€"phase Compressible SPH Method. Procedia IUTAM, 2015, 18, 123-137.	1.2	16
40	New asymptotic heat transfer model in thin liquid films. Applied Mathematical Modelling, 2017, 48, 844-859.	4.2	16
41	On the optimal experiment design for heat and moisture parameter estimation. Experimental Thermal and Fluid Science, 2017, 81, 109-122.	2.7	16
42	An improved explicit scheme for whole-building hygrothermal simulation. Building Simulation, 2018, 11, 465-481.	5.6	16
43	A comparative study of bi-directional Whitham systems. Applied Numerical Mathematics, 2019, 141, 248-262.	2.1	16
44	Influence of sedimentary layering on tsunami generation. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 1268-1275.	6.6	15
45	A plethora of generalised solitary gravityâ€"capillary water waves. Journal of Fluid Mechanics, 2015, 784, 664-680.	3.4	15
46	Generation of 2D water waves by moving bottom disturbances. IMA Journal of Applied Mathematics, 2015, 80, 1235-1253.	1.6	15
47	Travelling wave solutions for some two-component shallow water models. Journal of Differential Equations, 2016, 261, 1099-1114.	2.2	15
48	A new model for simulating heat, air and moisture transport in porous building materials. International Journal of Heat and Mass Transfer, 2019, 134, 1041-1060.	4.8	15
49	Experimental and numerical study of the propagation of focused wave groups in the nearshore zone. Physics Letters, Section A: General, Atomic and Solid State Physics, 2020, 384, 126144.	2.1	15
50	Analysis and improvement of the VTT mold growth model: Application to bamboo fiberboard. Building and Environment, 2018, 138, 262-274.	6.9	14
51	Modified shallow water equations for significantly varying seabeds. Applied Mathematical Modelling, 2016, 40, 9767-9787.	4.2	13
52	A Review of Tsunami Hazards in the Makran Subduction Zone. Geosciences (Switzerland), 2020, 10, 372.	2.2	13
53	On the Solution of Coupled Heat and Moisture Transport in Porous Material. Transport in Porous Media, 2018, 121, 665-702.	2.6	12
54	Non-dispersive conservative regularisation of nonlinear shallow water (and isentropic Euler) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 62 Td	3.3	12

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55	Mathematical Modeling of Powderâ€Snow Avalanche Flows. Studies in Applied Mathematics, 2011, 127, 38-66.	2.4	11
56	On the nonlinear dynamics of the traveling-wave solutions of the Serre system. Wave Motion, 2017, 70, 166-182.	2.0	11
57	On the modelling of shallow turbidity flows. Advances in Water Resources, 2018, 113, 310-327.	3.8	11
58	Evaluation of tsunami wave energy generated by earthquakes in the Makran subduction zone. Ocean Engineering, 2018, 165, 131-139.	4.3	11
59	Numerical Stability Investigations of the Method of Fundamental Solutions Applied to Wave-Current Interactions Using Generating-Absorbing Boundary Conditions. Symmetry, 2021, 13, 1153.	2.2	11
60	Numerical methods for diffusion phenomena in building physics: a practical introduction. , 2016, , .		11
61	On the multi-symplectic structure of the Serreâ€"Greenâ€"Naghdi equations. Journal of Physics A: Mathematical and Theoretical, 2016, 49, 03LT01.	2.1	10
62	On supraconvergence phenomenon for second order centered finite differences on non-uniform grids. Journal of Computational and Applied Mathematics, 2017, 326, 1-14.	2.0	10
63	Wave dynamics on networks: Method and application to the sine-Gordon equation. Applied Numerical Mathematics, 2018, 131, 54-71.	2.1	10
64	An adaptive simulation of nonlinear heat and moisture transfer as a boundary value problem. International Journal of Thermal Sciences, 2018, 133, 120-139.	4.9	10
65	On some model equations for pulsatile flow in viscoelastic vessels. Wave Motion, 2019, 90, 139-151.	2.0	10
66	DYNAMICS OF TSUNAMI WAVES. , 2007, , 201-224.		10
67	Flight Trajectories Optimization of Fixed-Wing UAV by Bank-Turn Mechanism. Drones, 2022, 6, 69.	4.9	10
68	Shallow water equations for large bathymetry variations. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 332001.	2.1	9
69	An innovative method to determine optimum insulation thickness based on non-uniform adaptive moving grid. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 2019, 41, 1.	1.6	9
70	Solving nonlinear diffusive problems in buildings by means of a Spectral reduced-order model. Journal of Building Performance Simulation, 2019, 12, 17-36.	2.0	9
71	Dispersive Shallow Water Waves. Lecture Notes in Geosystems Mathematics and Computing, 2020, , .	0.4	9
72	Weakly singular shock profiles for a non-dispersive regularization of shallow-water equations. Communications in Mathematical Sciences, 2018, 16, 1361-1378.	1.0	9

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73	Derivation of dissipative Boussinesq equations using the Dirichlet-to-Neumann operator approach. Mathematics and Computers in Simulation, 2016, 127, 80-93.	4.4	8
74	A new run-up algorithm based on local high-order analytic expansions. Journal of Computational and Applied Mathematics, 2016, 298, 82-96.	2.0	8
75	Solitary wave solutions and their interactions for fully nonlinear water waves with surface tension in the generalized Serre equations. Theoretical and Computational Fluid Dynamics, 2018, 32, 371-397.	2.2	8
76	Numerical Simulation of Conservation Laws with Moving Grid Nodes: Application to Tsunami Wave Modelling. Geosciences (Switzerland), 2019, 9, 197.	2.2	8
77	On the relevance of the dam break problem in the context of nonlinear shallow water equations. Discrete and Continuous Dynamical Systems - Series B, 2010, 13, 799-818.	0.9	8
78	Group and phase velocities in the free-surface visco-potential flow: New kind of boundary layer induced instability. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 3212-3216.	2.1	7
79	Direct dynamical energy cascade in the modified KdV equation. Physica D: Nonlinear Phenomena, 2015, 297, 76-87.	2.8	7
80	On the velocity of turbidity currents over moderate slopes. Fluid Dynamics Research, 2019, 51, 035501.	1.3	7
81	On weakly singular and fully nonlinear travelling shallow capillaryâ€"gravity waves in the critical regime. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 1719-1726.	2.1	6
82	Dispersive wave runup on non-uniform shores. Springer Proceedings in Mathematics, 2011, , 389-397.	0.5	6
83	Observation of the inverse energy cascade in the modified Korteweg-de Vries equation. Europhysics Letters, 2014, 107, 14001.	2.0	5
84	Run-up amplification of transient long waves. Quarterly of Applied Mathematics, 2015, 73, 177-199.	0.7	5
85	Efficient computation of capillaryâ€"gravity generalised solitary waves. Wave Motion, 2016, 65, 1-16.	2.0	5
86	Algebraic method for constructing singular steady solitary waves: a case study. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20160194.	2.1	5
87	Peregrineâ€™s System Revisited. , 2018, , 3-43.		5
88	Advanced Reduced-Order Models for Moisture Diffusion in Porous Media. Transport in Porous Media, 2018, 124, 965-994.	2.6	5
89	Numerical Modelling of Surface Water Wave Interaction with a Moving Wall. Communications in Computational Physics, 2018, 23, .	1.7	5
90	Some special solutions to the Hyperbolic NLS equation. Communications in Nonlinear Science and Numerical Simulation, 2018, 57, 202-220.	3.3	4

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91	An efficient method to estimate sorption isotherm curve coefficients. Inverse Problems in Science and Engineering, 2019, 27, 735-772.	1.2	4
92	Critical assessment of efficient numerical methods for a long-term simulation of heat and moisture transfer in porous materials. International Journal of Thermal Sciences, 2019, 145, 105982.	4.9	4
93	Regional tsunami hazard from splay faults in the Gulf of Oman. Ocean Engineering, 2022, 243, 110169.	4.3	4
94	Velocity and Energy Relaxation in Two-Phase Flows. Studies in Applied Mathematics, 2010, 125, 179.	2.4	3
95	Visco-potential flows in electrohydrodynamics. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 1721-1726.	2.1	3
96	Numerical study of the generalised Kleinâ€“Gordon equations. Physica D: Nonlinear Phenomena, 2015, 304-305, 23-33.	2.8	3
97	On the Reducibility and the Lenticular Sets of Zeroes of Almost Newman Lacunary Polynomials. Arnold Mathematical Journal, 2018, 4, 315-344.	0.4	3
98	Coupling Conditions for Water Waves at Forks. Symmetry, 2019, 11, 434.	2.2	3
99	On the multi-symplectic structure of Boussinesq-type systems. I: Derivation and mathematical properties. Physica D: Nonlinear Phenomena, 2019, 388, 10-21.	2.8	3
100	Learning extreme wave run-up conditions. Applied Ocean Research, 2020, 105, 102400.	4.1	3
101	Comparison of ground deformation due to movement of a fault for different types of crack surface. GEM - International Journal on Geomathematics, 2021, 12, 1.	1.6	3
102	Dispersive Shallow Water Wave Modelling. Part IV: Numerical Simulation on a Globally Spherical Geometry. Communications in Computational Physics, 2018, 23, .	1.7	3
103	Analytical and Numerical Investigations Applied to Study the Reflections and Transmissions of a Rectangular Breakwater Placed at the Bottom of a Wave Tank. Geosciences (Switzerland), 2021, 11, 430.	2.2	3
104	Multi-symplectic structure of fully nonlinear weakly dispersive internal gravity waves. Journal of Physics A: Mathematical and Theoretical, 2016, 49, 31LT01.	2.1	2
105	Asymptotic nonlinear and dispersive pulsatile flow in elastic vessels with cylindrical symmetry. Computers and Mathematics With Applications, 2018, 75, 4022-4047.	2.7	2
106	Hamiltonian regularisation of shallow water equations with uneven bottom. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 42LT01.	2.1	2
107	Nonlinear deformation and run-up of single tsunami waves of positive polarity: numerical simulations and analytical predictions. Natural Hazards and Earth System Sciences, 2019, 19, 2905-2913.	3.6	2
108	Horizontal displacement effect in tsunami wave generation in the western Makran region. Journal of Ocean Engineering and Marine Energy, 2020, 6, 427-439.	1.7	2

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109	An Analytical Study on Wave-Current-Mud Interaction. Water (Switzerland), 2020, 12, 2899.	2.7	2
110	Extreme Inundation Statistics on a Composite Beach. Water (Switzerland), 2020, 12, 1573.	2.7	2
111	An efficient numerical model for the simulation of coupled heat, air, and moisture transfer in porous media. Engineering Reports, 2020, 2, e12099.	1.7	2
112	Derivation of a Viscous Serreâ€“Greenâ€“Naghdi Equation: An Impasse?. Fluids, 2021, 6, 135.	1.7	2
113	Ecological Risk Indicators for Leached Heavy Metals from Coal Ash Generated at a Malaysian Power Plant. Sustainability, 2021, 13, 10222.	3.2	2
114	Dispersive Shallow Water Wave Modelling. Part II: Numerical Simulation on a Globally Flat Space. Communications in Computational Physics, 2018, 23, .	1.7	2
115	Dispersive Shallow Water Wave Modelling. Part III: Model Derivation on a Globally Spherical Geometry. Communications in Computational Physics, 2018, 23, .	1.7	2
116	Fast shallow water-wave solver for plane inclined beaches. SoftwareX, 2022, 17, 100983.	2.6	2
117	Modeling Water Waves Beyond Perturbations. Lecture Notes in Physics, 2016, , 197-210.	0.7	1
118	On the multi-symplectic structure of Boussinesq-type systems. II: Geometric discretization. Physica D: Nonlinear Phenomena, 2019, 397, 1-16.	2.8	1
119	Numerical Simulation of Fellerâ€™s Diffusion Equation. Mathematics, 2019, 7, 1067.	2.2	1
120	Adaptive Numerical Modeling of Tsunami Wave Generation and Propagation with FreeFem++. Geosciences (Switzerland), 2020, 10, 351.	2.2	1
121	Resonance Enhancement by Suitably Chosen Frequency Detuning. Mathematics, 2020, 8, 450.	2.2	1
122	Formation of the Dynamic Energy Cascades in Quartic and Quintic Generalized KdV Equations. Symmetry, 2020, 12, 1254.	2.2	1
123	Numerical Modeling of Jet at the Bottom of Tank at Moderate Reynolds Number Using Compact Hermitian Finite Differences Method. Fluids, 2021, 6, 63.	1.7	1
124	On Galilean Invariant and Energy Preserving BBM-Type Equations. Symmetry, 2021, 13, 878.	2.2	1
125	Alphabets, rewriting trails and periodic representations in algebraic bases. Research in Number Theory, 2021, 7, 1.	0.4	1
126	On time relaxed schemes and formulations for dispersive wave equations. AIMS Mathematics, 2019, 4, 254-278.	1.6	1

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127	Dispersive Effects During Long Wave Run-up on a Plane Beach. Advances in Science, Technology and Innovation, 2020, , 143-146.	0.4	0
128	A Non-Hydrostatic Non-Dispersive Shallow Water Model. , 2014, , 189-196.		0
129	Dispersive and Nondispersive Nonlinear Long Wave Transformations: Numerical and Experimental Results. Mathematics of Planet Earth, 2019, , 41-60.	0.1	0
130	Model Derivation on a Globally Flat Space. Lecture Notes in Geosystems Mathematics and Computing, 2020, , 1-43.	0.4	0
131	Model Derivation on a Globally Spherical Geometry. Lecture Notes in Geosystems Mathematics and Computing, 2020, , 135-190.	0.4	0
132	Numerical Simulation on a Globally Flat Space. Lecture Notes in Geosystems Mathematics and Computing, 2020, , 45-134.	0.4	0
133	Numerical Simulation on a Globally Spherical Geometry. Lecture Notes in Geosystems Mathematics and Computing, 2020, , 191-237.	0.4	0
134	MING: An interpretative support method for visual exploration of multidimensional data. Information Visualization, 0, , 147387162210795.	1.9	0
135	On a Class of Lacunary Almost Newman Polynomials Modulo <i>P</i> and Density Theorems. Uniform Distribution Theory, 2022, 17, 29-54.	0.2	0