Luis Vazquez

List of Publications by Year
in descending order

126	3,477	186265	155660
papers	citations	28 h-index	55 g-index

134	134	134	2140
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	From Eikonal to Antieikonal Approximations: Competition of Scales in the Framework of SchrÃ¶dinger and Classical Wave Equation. Journal of Computational and Nonlinear Dynamics, 2022, 17, .	1.2	0
2	About Some Possible Implementations of the Fractional Calculus. Mathematics, 2020, 8, 893.	2.2	13
3	Overview of the main radiation transport codes. Geoscientific Instrumentation, Methods and Data Systems, 2020, 9, 407-415.	1.6	3
4	Fractional Diffusion Models for the Atmosphere of Mars. Fractal and Fractional, 2018, 2, 1.	3.3	23
5	Signal-adapted tomography as a tool for dust devil detection. Aeolian Research, 2017, 29, 12-22.	2.7	8
6	The Martian Planetary Boundary Layer. , 2017, , 172-202.		14
7	The MetNet vehicle: a lander to deploy environmental stations for local and global investigations of Mars. Geoscientific Instrumentation, Methods and Data Systems, 2017, 6, 103-124.	1.6	6
8	Variabilidad estacional e interanual de la radiaciÃ³n solar en las coordenadas de aterrizaje de Spirit, Opportunity y Curiosity. FÃsica De La Tierra, 2016, 28, .	0.1	5
9	The wave equation: From eikonal to anti-eikonal approximation. Modern Electronic Materials, 2016, 2, 51-53.	0.6	8
10	The effect of the induced magnetic field on the electron density vertical profile of the Mars×³ ionosphere: A Mars Express MARSIS radar data analysis and interpretation, a case study. Planetary and Space Science, 2016, 126, 49-62.	1.7	11
11	NUMERICAL STUDY OF A CHARGED PARTICLE IN A GENERAL MAGNETIC FIELD. International Journal of Pure and Applied Mathematics, 2016, 106, .	0.2	0
12	A model to calculate solar radiation fluxes on the Martian surface. Journal of Space Weather and Space Climate, 2015, 5, A33.	3.3	34
13	Mathematics and Mars Exploration. Pure and Applied Geophysics, 2015, 172, 33-47.	1.9	5
14	Mars Science Laboratory relative humidity observations: Initial results. Journal of Geophysical Research E: Planets, 2014, 119, 2132-2147.	3.6	75
15	On the fractional Newton and wave equation in one space dimension. Applied Mathematical Modelling, 2014, 38, 3314-3324.	4.2	5
16	Numerical studies of charged particles in a magnetic field: Mars application. Open Physics, 2014, 12, .	1.7	1
17	Pressure observations by the Curiosity rover: Initial results. Journal of Geophysical Research E: Planets, 2014, 119, 82-92.	3.6	84
18	Two finite difference schemes for time fractional diffusion-wave equation. Numerical Algorithms, 2013, 64, 707-720.	1.9	119

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19	FRACTIONAL DUFFING'S EQUATION AND GEOMETRICAL RESONANCE. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2013, 23, 1350089.	1.7	15
20	Fractional calculus: theory and numerical methods. Open Physics, 2013, 11, .	1.7	4
21	The Martian Planetary Boundary Layer: Turbulent kinetic energy and fundamental similarity scales. Solar System Research, 2013, 47, 446-453.	0.7	3
22	Solution of Systems of Linear Equations: Numerical Simulations. , 2013, , 29-41.		0
23	Solution of Systems of Linear Equations. , 2013, , 15-28.		0
24	Elements of Newtonian Mechanics. , 2013, , 1-13.		0
25	Eigenvalue Problems: Numerical Simulations. , 2013, , 67-98.		0
26	Convergence Analysis of a Block-by-Block Method for Fractional Differential Equations. Numerical Mathematics, 2012, 5, 229-241.	1.3	35
27	REMS: The Environmental Sensor Suite for the Mars Science Laboratory Rover. Space Science Reviews, 2012, 170, 583-640.	8.1	247
28	Opportunities to observe solar eclipses by Phobos with the Mars Science Laboratory. Monthly Notices of the Royal Astronomical Society, 2012, 426, 3195-3200.	4.4	1
29	Internal degrees of freedom, long-range interactions and nonlocal effects in perturbed Kleinâ€“Gordon equations. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 515-527.	2.6	2
30	THE MARTIAN ATMOSPHERIC BOUNDARY LAYER. Reviews of Geophysics, 2011, 49, .	23.0	119
31	From Newton's Equation to Fractional Diffusion and Wave Equations. Advances in Difference Equations, 2011, 2011, 1-13.	3.5	27
32	Fractional dynamics of populations. Applied Mathematics and Computation, 2011, 218, 1089-1095.	2.2	88
33	Fractional heat equation and the second law of thermodynamics. Fractional Calculus and Applied Analysis, 2011, 14, 334-342.	2.2	39
34	The TKE budget in the convective Martian planetary boundary layer. Quarterly Journal of the Royal Meteorological Society, 2011, 137, 2194-2208.	2.7	7
35	SOLVING TWO-POINT BOUNDARY VALUE PROBLEMS OF FRACTIONAL DIFFERENTIAL EQUATIONS VIA SPLINE COLLOCATION METHODS. International Journal of Modeling, Simulation, and Scientific Computing, 2010, 01, 117-132.	1.4	6
36	Characterization of the Martian Surface Layer. Journals of the Atmospheric Sciences, 2009, 66, 187-198.	1.7	18

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37	Characterization of the Martian Convective Boundary Layer. Journals of the Atmospheric Sciences, 2009, 66, 2044-2058.	1.7	20
38	Retrieval of ultraviolet spectral irradiance from filtered photodiode measurements. Inverse Problems, 2009, 25, 115023.	2.0	13
39	Construction of exact invariants of time-dependent linear nonholonomic dynamical systems. Physics Letters, Section A: General, Atomic and Solid State Physics, 2008, 372, 1555-1561.	2.1	5
40	Spectral information retrieval from integrated broadband photodiode Martian ultraviolet measurements. Optics Letters, 2007, 32, 2596.	3.3	13
41	The dynamical nature of a backlash system with and without fluid friction. Nonlinear Dynamics, 2007, 47, 363-366.	5.2	11
42	Remote temperature retrieval from heating or cooling targets. Optics Letters, 2006, 31, 1420.	3.3	7
43	Astrobiological significance of minerals on Mars surface environment. Reviews in Environmental Science and Biotechnology, 2006, 5, 219-231.	8.1	31
44	On the solution of fractional evolution equations. Journal of Physics A, 2004, 37, 3271-3283.	1.6	34
45	A numerical scheme for the simulation of blow-up in the nonlinear SchrÃ¶dinger equation. Applied Mathematics and Computation, 2003, 134, 271-291.	2.2	11
46	Fractionally coupled solutions of the diffusion equation. Applied Mathematics and Computation, 2003, 141, 125-130.	2.2	21
47	Emergence of synchronous oscillations in neural networks excited by noise. Physica D: Nonlinear Phenomena, 2003, 179, 105-114.	2.8	20
48	Diffusion of intrinsic localized modes by attractor hopping. Journal of Physics A, 2003, 36, 11779-11790.	1.6	1
49	‹title›Characterization of atmospheric aerosols by an in-situ photometric technique in planetary environments‹/title›. , 2003, , .		1
50	Finite difference method to solve Maxwell's equations for soliton propagation. Applied Mathematics and Computation, 2002, 126, 213-229.	2.2	0
51	Focusing properties of shocking optical pulses. Optics Letters, 2001, 26, 376.	3.3	10
52	NONLINEAR PLANE WAVES IN A LONG-WAVELENGTH CONVECTION MODEL. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2001, 11, 2867-2874.	1.7	0
53	Comparison between Staggered and Unstaggered Finite-Difference Time-Domain Grids for Few-Cycle Temporal Optical Soliton Propagation. Journal of Computational Physics, 2000, 161, 379-400.	3.8	39
54	On complex singularities of solutions of the equation â„‹ux-u+up= 0. Journal of Physics A, 2000, 33, 6707-6720.	1.6	9

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55	On radial sine-Gordon breathers. Nonlinearity, 2000, 13, 1657-1680.	1.4	13
56	Creation of Localized Optical Waves that Do Not Obey the Radiation Condition at Infinity. Physical Review Letters, 2000, 85, 2104-2107.	7.8	13
57	Numerical solution of two dimensional Fokkerâ€"Planck equations. Applied Mathematics and Computation, 1999, 98, 109-117.	2.2	44
58	Conservative numerical schemes for Euler-Lagrange equations. Il Nuovo Cimento A, 1999, 112, 455-459.	0.2	1
59	Efficient shooting algorithms for solving the nonlinear one-dimensional scalar Helmholtz equation. Applied Mathematics and Computation, 1998, 95, 101-114.	2.2	2
60	Symplectic methods for the Ablowitz-Ladik model. Applied Mathematics and Computation, 1997, 82, 17-38.	2.2	28
61	Numerical Solutions of the Maxwellâ€"Bloch Laser Equations. Journal of Computational Physics, 1996, 129, 181-189.	3.8	8
62	Small-amplitude solitons in a nonlocal sine-Gordon model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1996, 221, 317-322.	2.1	11
63	Some aspects about the scalability of scientific applications on parallel architectures. Parallel Computing, 1996, 22, 1169-1195.	2.1	12
64	The nonlinear SchrÃ¶dinger equation with dissipation and the moment method. Physics Letters, Section A: General, Atomic and Solid State Physics, 1995, 202, 176-182.	2.1	18
65	Numerical simulation of nonlinear SchrÃ¶dinger systems: A new conservative scheme. Applied Mathematics and Computation, 1995, 71, 165-177.	2.2	166
66	Wave interaction with a random fat fractal: dimension of the reflection coefficient. Waves in Random and Complex Media, 1995, 5, 9-18.	1.5	13
67	Internal-Mode-Induced Resonances in Soliton-Impurity Interactions. Journal of the Physical Society of Japan, 1994, 63, 466-471.	1.6	4
68	Dissipative optical solitons. Physical Review A, 1994, 49, 2806-2811.	2.5	89
69	Dimerized ground states of the Frenkel-Kontorova model with a transversal degree of freedom. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 191, 257-260.	2.1	4
70	Numerical investigation of a non-local sine-Gordon model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 189, 454-459.	2.1	27
71	Kink dynamics in the periodically modulatedÏ†4model. Physical Review E, 1993, 48, 548-554.	2.1	29
72	Wave interaction with a fractal layer. Physical Review E, 1993, 48, 4044-4048.	2.1	12

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73	Frenkel-Kontorova model with a transversal degree of freedom: Static properties of kinks. Physical Review B, 1993, 48, 3734-3743.	3.2	22
74	Resonance Phenomena in Soliton-Impurity Interactions. NATO ASI Series Series B: Physics, 1993, , 113-116.	0.2	0
75	Geometrical distortion caused by substituents. 5. Method of evaluating explicative hypotheses for constrained systems. The Journal of Physical Chemistry, 1992, 96, 6624-6629.	2.9	2
76	Kink decay in a parametrically drivenÏ†4chain. Physical Review A, 1992, 45, 1207-1212.	2.5	19
77	Kink propagation through disordered media. Physical Review A, 1992, 45, 8867-8873.	2.5	16
78	Sine-Gordon breathers on spatially periodic potentials. Physical Review A, 1992, 45, 6031-6037.	2.5	25
79	Resonant kink-impurity interactions in the sine-Gordon model. Physical Review A, 1992, 45, 6019-6030.	2.5	128
80	Resonant kink-impurity interactions in theÏ†4model. Physical Review A, 1992, 46, 5214-5220.	2.5	106
81	Scattering properties of envelope solitons in disordered systems: decay of localization effects by strong nonlinearity. Waves in Random and Complex Media, 1992, 2, 125-140.	1.5	2
82	Two energy conserving numerical schemes for the Sine-Gordon equation. Applied Mathematics and Computation, 1991, 45, 17-30.	2.2	111
83	Kinks in the Klein-Gordon model with anharmonic interactions: a variational approach. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 157, 241-245.	2.1	26
84	Kink capture by a local impurity in the sine-Gordon model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 159, 318-322.	2.1	22
85	Topological soliton dynamics in a stochasticÃ¸4 model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 152, 184-190.	2.1	6
86	Dynamics of aÏ†4kink in the presence of strong potential fluctuations, dissipation, and boundaries. Physical Review A, 1991, 44, 1086-1103.	2.5	14
87	Kink dynamics in the weakly stochasticÏ†4model. Physical Review B, 1991, 44, 2554-2566.	3.2	12
88	Resonant soliton-impurity interactions. Physical Review Letters, 1991, 67, 1177-1180.	7.8	148
89	Creation of sine-Gordon solitons by a pulse force. Physical Review B, 1991, 43, 1098-1109.	3.2	13
90	NONLINEAR WAVE PROPAGATION IN DISORDERED MEDIA. International Journal of Modern Physics B, 1991, 05, 2825-2882.	2.0	34

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91	Existence of standing waves for dirac fields with singular nonlinearities. Communications in Mathematical Physics, 1990, 133, 53-74.	2.2	55
92	Relation between two variational methods to calculate the energy levels. Physics Letters, Section A: General, Atomic and Solid State Physics, 1990, 144, 15-16.	2.1	3
93	Analysis of Four Numerical Schemes for a Nonlinear Klein-Gordon Equation. Applied Mathematics and Computation, 1990, 35, 61-94.	2.2	115
94	The stochastic Î³ 4 model. , 1990, , 251-259.		0
95	Nonlinear effects in the wave equation with a cubic restoring force. Computational Mechanics, 1989, 5, 49-72.	4.0	5
96	Remarks About the Dynamics of the Solitary Waves. , 1989, , 489-492.		0
97	Motion of a charge in a magnetic dipole field. I. PainlevÃ© analysis and a conservative numerical scheme. Applied Mathematics and Computation, 1988, 25, 207-217.	2.2	4
98	Particle-spectrum estimates for the quantum field theoryÏ†tt-Ï†xx+(m3/ âˆšÎ»)sin[(âˆšÎ» /m)Ï†]=0 on a Minkowski lattice. Physical Review D, 1987, 35, 3274-3276.	4.7	3
99	Two-dimensional quantum field theory â–¡Ï†+Ïƒ'Ï†+Î»Ï†3=0 on a Minkowski lattice. Physical Review D, 1987, 35, 1409-1411.	4.7	7
100	Stability of nonlinear spinor fields with application to the Gross-Neveu model. Physical Review D, 1987, 36, 2422-2428.	4.7	16
101	Notizen: A More Accurate Explicit Scheme to Solve Certain Quantum Operator Equations of Motion. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 1987, 42, 905-906.	1.5	1
102	On the Discretization of Certain Operator Field Equations. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 1986, 41, 788-790.	1.5	12
103	Numerical solution of the sine-Gordon equation. Applied Mathematics and Computation, 1986, 18, 1-14.	2.2	156
104	Existence of localized solutions for a classical nonlinear Dirac field. Communications in Mathematical Physics, 1986, 105, 35-47.	2.2	93
105	Stability under dilations of nonlinear spinor fields. Physical Review D, 1986, 34, 641-643.	4.7	35
106	Explicit schemes to solve the SchrÃ¶dinger field on a Galileo lattice. Physical Review D, 1986, 34, 3253-3254.	4.7	2
107	Sine-Gordon solitons in the presence of a noisy potential. Physica D: Nonlinear Phenomena, 1985, 14, 273-276.	2.8	6
108	Dirac field on a Minkowski lattice. Physical Review D, 1985, 32, 2066-2069.	4.7	7

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109	Sine-Gordon solitons under weak stochastic perturbations. Physical Review B, 1985, 32, 8305-8311.	3.2	45
110	On the self-torque on an extended classical charged particle. Journal of Physics A, 1984, 17, 2011-2016.	1.6	3
111	Numerical solution of a nonlinear wave equation in polar coordinates. Applied Mathematics and Computation, 1984, 14, 313-329.	2.2	17
112	Stability of certain scalar localized solutions in a ball. Societa Italiana Di Fisica Nuovo Cimento B-General Physics, Relativity Astronomy and Mathematical Physics and Methods, 1982, 69, 63-70.	0.2	3
113	Existence of localized solutions for certain model field theories. Journal of Mathematical Physics, 1981, 22, 1005-1009.	1.1	12
114	Born-Infeld effects in the electromagnetic mass of an extended Dirac particle. Physical Review D, 1980, 22, 2422-2424.	4.7	4
115	Kinks and the Heisenberg uncertainty principle. Physical Review D, 1979, 19, 493-495.	4.7	6
116	The gyromagnetic ratio of the electron in a Coulomb field. International Journal of Theoretical Physics, 1979, 18, 689-693.	1.2	0
117	Time-dependent solutions of a classical nonlinear scalar field. Lettere Al Nuovo Cimento Rivista Internazionale Della SocietÃ Italiana Di Fisica, 1978, 23, 23-26.	0.4	0
118	Charges in a classical nonlinear scalar field. Lettere Al Nuovo Cimento Rivista Internazionale Della SocietÃ Italiana Di Fisica, 1978, 21, 614-616.	0.4	1
119	Numerical solution of a nonlinear Klein-Gordon equation. Journal of Computational Physics, 1978, 28, 271-278.	3.8	256
120	Interaction and stability of localized solutions in a classical nonlinear scalar field theory. Journal of Mathematical Physics, 1978, 19, 387-389.	1.1	6
121	Localised solutions of a non-linear spinor field. Journal of Physics A, 1977, 10, 1361-1368.	1.6	25
122	Localized solutions of a nonlinear scalar field with a scalar potential. Journal of Mathematical Physics, 1977, 18, 1341-1342.	1.1	9
123	Localized solutions of a nonlinear electromagnetic field. Journal of Mathematical Physics, 1977, 18, 1259-1263.	1.1	4
124	Stationary localized solutions in nonlinear classical fields. Journal of Mathematical Physics, 1977, 18, 1343-1347.	1.1	8
125	On the radius of certain classical localized solutions. Lettere Al Nuovo Cimento Rivista Internazionale Della SocietÃ Italiana Di Fisica, 1977, 19, 561-564.	0.4	6
126	Classical electrodynamics of a nonlinear Dirac field with anomalous magnetic moment. Physical Review D, 1974, 10, 517-525.	4.7	22