

Luciano Lopez

List of Publications by Year in descending order

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76
papers

1,079
citations

361413

20
h-index

454955

30
g-index

81
all docs

81
docs citations

81
times ranked

552
citing authors

#	ARTICLE	IF	CITATIONS
1	Sliding Motion in Filippov Differential Systems: Theoretical Results and a Computational Approach. SIAM Journal on Numerical Analysis, 2009, 47, 2023-2051.	2.3	81
2	A survey of numerical methods for IVPs of ODEs with discontinuous right-hand side. Journal of Computational and Applied Mathematics, 2012, 236, 3967-3991.	2.0	74
3	The Cayley transform in the numerical solution of unitary differential systems. Advances in Computational Mathematics, 1998, 8, 317-334.	1.6	65
4	Analysis of Projection Methods for Rational Function Approximation to the Matrix Exponential. SIAM Journal on Numerical Analysis, 2006, 44, 613-635.	2.3	62
5	Sliding motion on discontinuity surfaces of high co-dimension. A construction for selecting a Filippov vector field. Numerische Mathematik, 2011, 117, 779-811.	1.9	50
6	A Filippov sliding vector field on an attracting co-dimension 2 discontinuity surface, and a limited loss-of-attractivity analysis. Journal of Differential Equations, 2013, 254, 1800-1832.	2.2	42
7	The 1D Richards's equation in two layered soils: a Filippov approach to treat discontinuities. Advances in Water Resources, 2018, 115, 264-272.	3.8	30
8	Numerical methods for the nonlocal wave equation of the peridynamics. Applied Numerical Mathematics, 2020, 155, 119-139.	2.1	29
9	A mixed MoL-TMoL for the numerical solution of the 2D Richards's equation in layered soils. Computers and Mathematics With Applications, 2020, 79, 1990-2001.	2.7	29
10	Boundary value methods and BV-stability in the solution of initial value problems. Applied Numerical Mathematics, 1993, 11, 225-239.	2.1	28
11	The use of the factorization of five-diagonal matrices by tridiagonal Toeplitz matrices. Applied Mathematics Letters, 1998, 11, 61-69.	2.7	26
12	Fundamental matrix solutions of piecewise smooth differential systems. Mathematics and Computers in Simulation, 2011, 81, 932-953.	4.4	26
13	Preserving geometric properties of the exponential matrix by block Krylov subspace methods. BIT Numerical Mathematics, 2006, 46, 813-830.	2.0	25
14	A spectral method with volume penalization for a nonlinear peridynamic model. International Journal for Numerical Methods in Engineering, 2021, 122, 707-725.	2.8	24
15	Applications of the Cayley approach in the numerical solution of matrix differential systems on quadratic groups. Applied Numerical Mathematics, 2001, 36, 35-55.	2.1	23
16	A space-time discretization of a nonlinear peridynamic model on a 2D lamina. Computers and Mathematics With Applications, 2022, 116, 161-175.	2.7	23
17	Mimetic finite difference methods for Hamiltonian wave equations in 2D. Computers and Mathematics With Applications, 2017, 74, 1123-1141.	2.7	23
18	Computation of the Exponential of Large Sparse Skew-Symmetric Matrices. SIAM Journal of Scientific Computing, 2005, 27, 278-293.	2.8	22

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19	On the continuous extension of Adams's Bashforth methods and the event location in discontinuous ODEs. Applied Mathematics Letters, 2012, 25, 995-999.	2.7	22
20	A new data assimilation technique based on ensemble Kalman filter and Brownian bridges: An application to Richards's equation. Computer Physics Communications, 2016, 208, 43-53.	7.5	22
21	Dynamical modeling of liver Aquaporin-9 expression and glycerol permeability in hepatic glucose metabolism. European Journal of Cell Biology, 2017, 96, 61-69.	3.6	21
22	Spectral properties and conservation laws in Mimetic Finite Difference methods for PDEs. Journal of Computational and Applied Mathematics, 2016, 292, 760-784.	2.0	20
23	Numerical solution of discontinuous differential systems: Approaching the discontinuity surface from one side. Applied Numerical Mathematics, 2013, 67, 98-110.	2.1	18
24	A finite difference scheme for a stiff problem arising in the numerical solution of a population dynamic model with spatial diffusion. Nonlinear Analysis: Theory, Methods & Applications, 1985, 9, 1-12.	1.1	16
25	One step semi-explicit methods based on the Cayley transform for solving isospectral flows. Journal of Computational and Applied Mathematics, 1998, 89, 219-223.	2.0	16
26	Runge-Kutta Type Methods Based on Geodesics for Systems of ODEs on the Stiefel Manifold. BIT Numerical Mathematics, 2001, 41, 912-923.	2.0	16
27	On the Equivalence between the Sigmoidal Approach and Utkin's Approach for Piecewise-Linear Models of Gene Regulatory Networks. SIAM Journal on Applied Dynamical Systems, 2014, 13, 1270-1292.	1.6	15
28	A hybrid scheme for solving a model of population dynamics. Calcolo, 1982, 19, 379-395.	1.1	14
29	Geometric Integration on Manifold of Square Oblique Rotation Matrices. SIAM Journal on Matrix Analysis and Applications, 2002, 23, 974-989.	1.4	13
30	On the Low-Rank Approximation of Data on the Unit Sphere. SIAM Journal on Matrix Analysis and Applications, 2005, 27, 46-60.	1.4	13
31	Computation of functions of Hamiltonian and skew-symmetric matrices. Mathematics and Computers in Simulation, 2008, 79, 1284-1297.	4.4	13
32	Two-step boundary value methods in the solution of ODEs. Computers and Mathematics With Applications, 1993, 26, 91-100.	2.7	10
33	One-sided direct event location techniques in the numerical solution of discontinuous differential systems. BIT Numerical Mathematics, 2015, 55, 987-1003.	2.0	10
34	Smooth singular value decomposition on the symplectic group and Lyapunov exponents approximation*. Calcolo, 2006, 43, 1-15.	1.1	9
35	A Survey on Methods for Computing Matrix Exponentials in Numerical Schemes for ODEs. Lecture Notes in Computer Science, 2003, , 111-120.	1.3	9
36	A nonperiodic Chebyshev spectral method avoiding penalization techniques for a class of nonlinear peridynamic models. International Journal for Numerical Methods in Engineering, 2022, 123, 4859-4876.	2.8	9

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37	Sharp sufficient attractivity conditions for sliding on a co-dimension 2 discontinuity surface. <i>Mathematics and Computers in Simulation</i> , 2015, 110, 3-14.	4.4	8
38	A model for the hepatic glucose metabolism based on Hill and step functions. <i>Journal of Computational and Applied Mathematics</i> , 2016, 292, 746-759.	2.0	8
39	Computation of Eigenvalues for Nonlocal Models by Spectral Methods. <i>Journal of Peridynamics and Nonlocal Modeling</i> , 2023, 5, 133-154.	2.9	8
40	Variable step-size techniques in continuous Runge-Kutta methods for isospectral dynamical systems. <i>Journal of Computational and Applied Mathematics</i> , 1997, 82, 261-278.	2.0	7
41	Numerical procedures based on Runge-Kutta methods for solving isospectral flows. <i>Applied Numerical Mathematics</i> , 1997, 25, 443-459.	2.1	7
42	Lyapunov Exponents of Systems Evolving on Quadratic Groups. <i>SIAM Journal on Matrix Analysis and Applications</i> , 2003, 24, 1175-1185.	1.4	7
43	Time-transformations for the event location in discontinuous ODEs. <i>Mathematics of Computation</i> , 2017, 87, 2321-2341.	2.1	7
44	Stability of a three-point scheme for linear second order singularly perturbed BVPs with turning points. <i>Applied Mathematics and Computation</i> , 1992, 52, 279-300.	2.2	6
45	Smooth SVD on the Lorentz group with application to computation of Lyapunov exponents. <i>Journal of Computational and Applied Mathematics</i> , 2004, 164-165, 255-264.	2.0	6
46	Direct event location techniques based on Adams multistep methods for discontinuous ODEs. <i>Applied Mathematics Letters</i> , 2015, 49, 152-158.	2.7	6
47	Uniqueness of Filippov Sliding Vector Field on the Intersection of Two Surfaces in \mathbb{R}^3 and Implications for Stability of Periodic Orbits. <i>Journal of Nonlinear Science</i> , 2015, 25, 1453-1471.	2.1	6
48	Decay to spatially homogeneous states for the numerical solution of reaction-diffusion systems. <i>Calcolo</i> , 1982, 19, 193-208.	1.1	5
49	Stability and Asymptotic Behaviour for the Numerical Solution of a Reaction-Diffusion Model for a Deterministic Diffusive Epidemic. <i>IMA Journal of Numerical Analysis</i> , 1983, 3, 341-351.	2.9	4
50	Newton-type methods for solving nonlinear equations on quadratic matrix groups. <i>Journal of Computational and Applied Mathematics</i> , 2000, 115, 357-368.	2.0	4
51	On Filippov solutions of discontinuous DAEs of index 1. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2021, 95, 105656.	3.3	4
52	A Method for the Numerical Solution of a Class of Nonlinear Diffusion Equations. <i>Rocky Mountain Journal of Mathematics</i> , 1991, 21, .	0.4	4
53	Metodi ad un passo fortemente stabili per equazioni integrali di Volterra di seconda specie di tipo stiff. <i>Calcolo</i> , 1986, 23, 249-263.	1.1	3
54	One-step collocation methods for differential-algebraic systems of index 1. <i>Journal of Computational and Applied Mathematics</i> , 1990, 29, 145-159.	2.0	3

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55	Numerical methods for Hermitian unitary differential systems. Journal of Computational and Applied Mathematics, 1999, 111, 133-145.	2.0	3
56	Numerical Integration of a Class of Ordinary Differential Equations on the General Linear Group of Matrices. Numerical Algorithms, 2003, 34, 271-281.	1.9	3
57	A projection method for the numerical solution of linear systems in separable stiff differential equations. International Journal of Computer Mathematics, 1989, 30, 191-206.	1.8	2
58	Bounds for the solutions of a class of tridiagonal linear systems. Linear Algebra and Its Applications, 1994, 202, 221-233.	0.9	2
59	Runge Kutta Type Methods for Isodynamical Matrix Flows: Applications to Balanced Realizations. Computing (Vienna/New York), 2002, 68, 255-274.	4.8	2
60	Differential approaches for computing Euclidean diagonal norm balanced realizations in control theory. Future Generation Computer Systems, 2003, 19, 1155-1163.	7.5	2
61	Numerical methods for ordinary differential equations on matrix manifolds. Journal of Computational and Applied Mathematics, 2007, 210, 232-243.	2.0	2
62	Numerical event location techniques in discontinuous differential algebraic equations. Applied Numerical Mathematics, 2022, 178, 98-122.	2.1	2
63	Parallel methods in the numerical treatment of population dynamic models. Parallel Computing, 1992, 18, 767-777.	2.1	1
64	Methods based on boundary value techniques for solving parabolic equations on parallel computers. Parallel Computing, 1993, 19, 979-991.	2.1	1
65	Tridiagonal splittings in the conditioning and parallel solution of banded linear systems. Linear Algebra and Its Applications, 1997, 251, 249-265.	0.9	1
66	Numerical methods for dynamical systems in the Lorentz group. Nonlinear Analysis: Theory, Methods & Applications, 2001, 47, 2585-2596.	1.1	1
67	Exponential monotonicity of quadratic forms in ODEs and preserving methods. Future Generation Computer Systems, 2003, 19, 1187-1195.	7.5	1
68	Symplectic Methods Based on the Matrix Variational Equation for Hamiltonian System. Lecture Notes in Computer Science, 2002, , 526-535.	1.3	1
69	Computational techniques to locate crossing/sliding regions and their sets of attraction in non-smooth dynamical systems. Discrete and Continuous Dynamical Systems - Series B, 2018, 23, 2911-2934.	0.9	1
70	An explicit two-step method for solving stiff systems of ordinary differential equations. International Journal of Computer Mathematics, 1987, 22, 271-285.	1.8	0
71	The invertibility of a class of tridiagonal matrices. Applied Mathematics Letters, 1992, 5, 47-51.	2.7	0
72	Boundary conditions and conditioning in the solution of discrete BVPs. Applied Mathematics Letters, 1993, 6, 43-49.	2.7	0

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73	A Hybrid Numerical Technique for the Solution of a Class of Implicit Matrix Differential Equation. Lecture Notes in Computer Science, 2004, , 459-466.	1.3	0
74	GEOMETRIC INTEGRATION OF ODES ON THE GENERAL LINEAR GROUP OF MATRICES. , 2005, , .		0
75	SEMI-EXPLICIT TIME-STEPPING METHODS FOR DYNAMICAL SYSTEMS WITH COMPLEMENTARY CONSTRAINTS. , 2005, , .		0
76	On Filippov and Utkin Sliding Solution of Discontinuous Systems. , 2009, , .		0