

Giovanni Russo

List of Publications by Year in descending order

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135
papers

5,142
citations

101496

36
h-index

102432

66
g-index

141
all docs

141
docs citations

141
times ranked

2554
citing authors

#	ARTICLE	IF	CITATIONS
1	Implicit-Explicit Runge-Kutta Schemes and Applications to Hyperbolic Systems with Relaxation. <i>Journal of Scientific Computing</i> , 2005, 25, 129-155.	1.1	369
2	Central WENO schemes for hyperbolic systems of conservation laws. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 1999, 33, 547-571.	0.8	313
3	A Remark on Computing Distance Functions. <i>Journal of Computational Physics</i> , 2000, 163, 51-67.	1.9	306
4	Compact Central WENO Schemes for Multidimensional Conservation Laws. <i>SIAM Journal of Scientific Computing</i> , 2000, 22, 656-672.	1.3	259
5	Graph Metrics for Temporal Networks. <i>Understanding Complex Systems</i> , 2013, , 15-40.	0.3	159
6	Numerical Solution of the Boltzmann Equation I: Spectrally Accurate Approximation of the Collision Operator. <i>SIAM Journal on Numerical Analysis</i> , 2000, 37, 1217-1245.	1.1	148
7	Uniformly Accurate Schemes for Hyperbolic Systems with Relaxation. <i>SIAM Journal on Numerical Analysis</i> , 1997, 34, 246-281.	1.1	138
8	A Fourth-Order Central WENO Scheme for Multidimensional Hyperbolic Systems of Conservation Laws. <i>SIAM Journal of Scientific Computing</i> , 2002, 24, 480-506.	1.3	121
9	Implicit-Explicit Runge-Kutta Schemes for Hyperbolic Systems and Kinetic Equations in the Diffusion Limit. <i>SIAM Journal of Scientific Computing</i> , 2013, 35, A22-A51.	1.3	113
10	Central Schemes for Balance Laws of Relaxation Type. <i>SIAM Journal on Numerical Analysis</i> , 2000, 38, 1337-1356.	1.1	95
11	Components in time-varying graphs. <i>Chaos</i> , 2012, 22, 023101.	1.0	94
12	Simulation of faceted film growth in three dimensions: microstructure, morphology and texture. <i>Acta Materialia</i> , 2005, 53, 1191-1204.	3.8	89
13	High order numerical methods for the space non-homogeneous Boltzmann equation. <i>Journal of Computational Physics</i> , 2003, 186, 457-480.	1.9	86
14	High-Order Central Schemes for Hyperbolic Systems of Conservation Laws. <i>SIAM Journal of Scientific Computing</i> , 1999, 21, 294-322.	1.3	85
15	Fast Spectral Methods for the Fokker-Planck-Landau Collision Operator. <i>Journal of Computational Physics</i> , 2000, 165, 216-236.	1.9	82
16	On a Class of Uniformly Accurate IMEX Runge-Kutta Schemes and Applications to Hyperbolic Systems with Relaxation. <i>SIAM Journal of Scientific Computing</i> , 2009, 31, 1926-1945.	1.3	82
17	Adaptive Mesh Refinement for Hyperbolic Systems Based on Third-Order Compact WENO Reconstruction. <i>Journal of Scientific Computing</i> , 2016, 66, 692-724.	1.1	81
18	High Order Semi-implicit Schemes for Time Dependent Partial Differential Equations. <i>Journal of Scientific Computing</i> , 2016, 68, 975-1001.	1.1	75

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19	Time Relaxed Monte Carlo Methods for the Boltzmann Equation. <i>SIAM Journal of Scientific Computing</i> , 2001, 23, 1253-1273.	1.3	74
20	Extended Hydrodynamical Model of Carrier Transport in Semiconductors. <i>SIAM Journal on Applied Mathematics</i> , 2000, 61, 74-101.	0.8	73
21	Implicit–explicit numerical schemes for jump–diffusion processes. <i>Calcolo</i> , 2007, 44, 33-57.	0.6	71
22	Central Weighted ENO Schemes for Hyperbolic Conservation Laws on Fixed and Moving Unstructured Meshes. <i>SIAM Journal of Scientific Computing</i> , 2017, 39, A2564-A2591.	1.3	71
23	Computation of strained epitaxial growth in three dimensions by kinetic Monte Carlo. <i>Journal of Computational Physics</i> , 2006, 214, 809-828.	1.9	67
24	An introduction to Monte Carlo method for the Boltzmann equation. <i>ESAIM: Proceedings and Surveys</i> , 2001, 10, 35-75.	0.4	65
25	A third order central WENO scheme for 2D conservation laws. <i>Applied Numerical Mathematics</i> , 2000, 33, 415-421.	1.2	58
26	Kinetic Theory for Bubbly Flow I: Collisionless case. <i>SIAM Journal on Applied Mathematics</i> , 1996, 56, 327-357.	0.8	56
27	Finite-difference ghost-point multigrid methods on Cartesian grids for elliptic problems in arbitrary domains. <i>Journal of Computational Physics</i> , 2013, 241, 464-501.	1.9	55
28	A Weighted Essentially Nonoscillatory, Large Time-Step Scheme for Hamilton–Jacobi Equations. <i>SIAM Journal of Scientific Computing</i> , 2005, 27, 1071-1091.	1.3	53
29	All Mach Number Second Order Semi-implicit Scheme for the Euler Equations of Gas Dynamics. <i>Journal of Scientific Computing</i> , 2018, 77, 850-884.	1.1	53
30	A Level-Set Method for the Evolution of Faceted Crystals. <i>SIAM Journal of Scientific Computing</i> , 2000, 21, 2073-2095.	1.3	47
31	Polynomial upwind schemes for hyperbolic systems. <i>Comptes Rendus Mathematique</i> , 1999, 328, 479-483.	0.5	46
32	Domain Decomposition Operator Splittings for the Solution of Parabolic Equations. <i>SIAM Journal of Scientific Computing</i> , 1998, 19, 912-932.	1.3	45
33	Sensitivity analysis of the MAGFLOW Cellular Automaton model for lava flow simulation. <i>Environmental Modelling and Software</i> , 2012, 35, 122-131.	1.9	44
34	Deterministic diffusion of particles. <i>Communications on Pure and Applied Mathematics</i> , 1990, 43, 697-733.	1.2	43
35	Impulse formulation of the Euler equations: general properties and numerical methods. <i>Journal of Fluid Mechanics</i> , 1999, 391, 189-209.	1.4	39
36	Asymptotic preserving Monte Carlo methods for the Boltzmann equation. <i>Transport Theory and Statistical Physics</i> , 2000, 29, 415-430.	0.4	38

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37	High-Order Asymptotic-Preserving Methods for Fully Nonlinear Relaxation Problems. SIAM Journal of Scientific Computing, 2014, 36, A377-A395.	1.3	36
38	Linearly Implicit IMEX Runge–Kutta Methods for a Class of Degenerate Convection-Diffusion Problems. SIAM Journal of Scientific Computing, 2015, 37, B305-B331.	1.3	36
39	Semilagrangian schemes applied to moving boundary problems for the BGK model of rarefied gas dynamics. Kinetic and Related Models, 2009, 2, 231-250.	0.5	36
40	Flux-Explicit IMEX Runge–Kutta Schemes for Hyperbolic to Parabolic Relaxation Problems. SIAM Journal on Numerical Analysis, 2013, 51, 163-190.	1.1	35
41	A Unified IMEX Runge–Kutta Approach for Hyperbolic Systems with Multiscale Relaxation. SIAM Journal on Numerical Analysis, 2017, 55, 2085-2109.	1.1	35
42	Stability properties of relativistic shock waves: Basic results. Physics of Fluids, 1987, 30, 2406.	1.4	34
43	Second order finite-difference ghost-point multigrid methods for elliptic problems with discontinuous coefficients on an arbitrary interface. Journal of Computational Physics, 2018, 361, 299-330.	1.9	34
44	Central schemes for conservation laws with application to shallow water equations. , 2005, , 225-246.		33
45	Linear stability for plane relativistic shock waves. Physics of Fluids, 1987, 30, 1045.	1.4	32
46	Fast Triangulated Vortex Methods for the 2D Euler Equations. Journal of Computational Physics, 1994, 111, 291-323.	1.9	32
47	Convergence of a Semi-Lagrangian Scheme for the BGK Model of the Boltzmann Equation. SIAM Journal on Numerical Analysis, 2012, 50, 1111-1135.	1.1	32
48	High order semi-Lagrangian methods for the BGK equation. Communications in Mathematical Sciences, 2016, 14, 389-414.	0.5	32
49	NUMERICAL SOLUTION FOR HYDRODYNAMICAL MODELS OF SEMICONDUCTORS. Mathematical Models and Methods in Applied Sciences, 2000, 10, 1099-1120.	1.7	31
50	On the stability of spectral methods for the homogeneous Boltzmann equation. Transport Theory and Statistical Physics, 2000, 29, 431-447.	0.4	29
51	Implicit-explicit runge-kutta schemes and applications to hyperbolic systems with relaxation. Journal of Scientific Computing, 2005, 25, 129-155.	1.1	27
52	Central Runge–Kutta Schemes for Conservation Laws. SIAM Journal of Scientific Computing, 2005, 26, 979-999.	1.3	27
53	A high order semi-implicit IMEX WENO scheme for the all-Mach isentropic Euler system. Journal of Computational Physics, 2019, 392, 594-618.	1.9	27
54	Quasicontinuum Monte Carlo: A method for surface growth simulations. Physical Review B, 2004, 69, .	1.1	23

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55	Numerical solutions of the Boltzmann equation: comparison of different algorithms. <i>European Journal of Mechanics, B/Fluids</i> , 2008, 27, 62-74.	1.2	23
56	A particle method for collisional kinetic equations. I. Basic theory and one-dimensional results. <i>Journal of Computational Physics</i> , 1990, 87, 270-300.	1.9	22
57	On the behavior of the total variation in CWENO methods for conservation laws. <i>Applied Numerical Mathematics</i> , 2000, 33, 407-414.	1.2	22
58	Hyperbolic Hydrodynamical Model of Carrier Transport in Semiconductors. <i>VLSI Design</i> , 1998, 8, 521-525.	0.5	21
59	A Second Order Finite-Difference Ghost-Point Method for Elasticity Problems on Unbounded Domains with Applications to Volcanology. <i>Communications in Computational Physics</i> , 2014, 16, 983-1009.	0.7	19
60	A High Order Multi-Dimensional Characteristic Tracing Strategy for the Vlasov-Poisson System. <i>Journal of Scientific Computing</i> , 2017, 71, 414-434.	1.1	19
61	Linearly implicit all Mach number shock capturing schemes for the Euler equations. <i>Journal of Computational Physics</i> , 2019, 393, 278-312.	1.9	19
62	Central Schemes for Balance Laws. , 2001, , 821-829.		19
63	CROSS-VALIDATION OF NUMERICAL SCHEMES FOR EXTENDED HYDRODYNAMICAL MODELS OF SEMICONDUCTORS. <i>Mathematical Models and Methods in Applied Sciences</i> , 2000, 10, 833-861.	1.7	17
64	Generalized wavefront expansion I. Higher order corrections for the propagation of weak shock waves. <i>Wave Motion</i> , 1986, 8, 243-258.	1.0	16
65	ANALYTICAL AND NUMERICAL SOLUTIONS OF THE SHALLOW WATER EQUATIONS FOR 2D ROTATIONAL FLOWS. <i>Mathematical Models and Methods in Applied Sciences</i> , 2004, 14, 1451-1479.	1.7	16
66	A Multigrid-Fourier Method for the Computation of Elastic Fields with Application to Heteroepitaxy. <i>Multiscale Modeling and Simulation</i> , 2006, 5, 130-148.	0.6	16
67	Convergence of a Semi-Lagrangian Scheme for the Ellipsoidal BGK Model of the Boltzmann Equation. <i>SIAM Journal on Numerical Analysis</i> , 2018, 56, 3580-3610.	1.1	16
68	Central Schemes for Nonconservative Hyperbolic Systems. <i>SIAM Journal of Scientific Computing</i> , 2012, 34, B523-B558.	1.3	15
69	Conservative semi-Lagrangian schemes for kinetic equations Part I: Reconstruction. <i>Journal of Computational Physics</i> , 2021, 432, 110159.	1.9	14
70	Stability properties of relativistic shock waves - Applications. <i>Astrophysical Journal</i> , 1988, 334, 707.	1.6	14
71	A Deterministic Vortex Method for the Navier-Stokes Equations. <i>Journal of Computational Physics</i> , 1993, 108, 84-94.	1.9	13
72	Kinetic Theory for Bubbly Flow II: Fluid Dynamic Limit. <i>SIAM Journal on Applied Mathematics</i> , 1996, 56, 358-371.	0.8	13

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73	Implicit-Explicit Integral Deferred Correction Methods for Stiff Problems. SIAM Journal of Scientific Computing, 2018, 40, A787-A816.	1.3	13
74	Conservative semi-Lagrangian schemes for kinetic equations Part II: Applications. Journal of Computational Physics, 2021, 436, 110281.	1.9	13
75	On linearly implicit IMEX Runge-Kutta methods for degenerate convection-diffusion problems modeling polydisperse sedimentation. Bulletin of the Brazilian Mathematical Society, 2016, 47, 171-185.	0.3	12
76	Lack of practical identifiability may hamper reliable predictions in COVID-19 epidemic models. Science Advances, 2022, 8, eabg5234.	4.7	12
77	Generalized wavefront expansion II: The propagation of step shocks. Wave Motion, 1988, 10, 3-18.	1.0	11
78	The Gaussian wave packet transform: Efficient computation of the semi-classical limit of the Schrödinger equation. Part 1 – Formulation and the one dimensional case. Journal of Computational Physics, 2013, 233, 192-209.	1.9	11
79	High Order Semi-implicit WENO Schemes for All-Mach Full Euler System of Gas Dynamics. SIAM Journal of Scientific Computing, 2022, 44, B368-B394.	1.3	11
80	Porting and optimizing MAGFLOW on CUDA. Annals of Geophysics, 2011, 54, .	0.5	10
81	Hamilton-based Numerical Methods for a Fluid-Membrane Interaction in Two and Three Dimensions. SIAM Journal of Scientific Computing, 1998, 19, 861-892.	1.3	9
82	Maximum norm stability of difference schemes for parabolic equations on overset nonmatching space-time grids. Mathematics of Computation, 2002, 72, 619-657.	1.1	9
83	A hydro-geophysical simulator for fluid and mechanical processes in volcanic areas. Journal of Mathematics in Industry, 2016, 6, .	0.7	9
84	Collocation Methods for High-Order Well-Balanced Methods for Systems of Balance Laws. Mathematics, 2021, 9, 1799.	1.1	9
85	Second Order Multigrid Methods for Elliptic Problems with Discontinuous Coefficients on an Arbitrary Interface, I: One Dimensional Problems. Numerical Mathematics, 2012, 5, 19-42.	0.6	9
86	The Gaussian wave packet transform: Efficient computation of the semi-classical limit of the Schrödinger equation. Part 2. Multidimensional case. Journal of Computational Physics, 2014, 257, 1022-1038.	1.9	8
87	Discretization of Semiconductor Device Problems (II). Handbook of Numerical Analysis, 2005, , 443-522.	0.9	7
88	High Order Multi-dimensional Characteristics Tracing for the Incompressible Euler Equation and the Guiding-Center Vlasov Equation. Journal of Scientific Computing, 2018, 77, 263-282.	1.1	7
89	Conservative Multi-dimensional Semi-Lagrangian Finite Difference Scheme: Stability and Applications to the Kinetic and Fluid Simulations. Journal of Scientific Computing, 2019, 79, 1241-1270.	1.1	7
90	High Order Asymptotically Strong-Stability-Preserving Methods for Hyperbolic Systems with Stiff Relaxation. , 2003, , 241-251.		7

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91	Plane Couette Flow Computations by TRMC and MFS Methods. AIP Conference Proceedings, 2005, , .	0.3	6
92	Head Reconstruction Method to Balance Flux and Source Terms in Shallow Water Equations. Journal of Engineering Mechanics - ASCE, 2010, 136, 517-523.	1.6	6
93	Approximate Taylor methods for ODEs. Computers and Fluids, 2017, 159, 156-166.	1.3	6
94	High order finite volume schemes for balance laws with stiff relaxation. Computers and Fluids, 2018, 169, 155-168.	1.3	6
95	Interaction of rigid body motion and rarefied gas dynamics based on the BGK model. Mathematics in Engineering, 2020, 2, 203-229.	0.5	6
96	A meshfree arbitrary Lagrangian-Eulerian method for the BGK model of the Boltzmann equation with moving boundaries. Journal of Computational Physics, 2022, 458, 111088.	1.9	6
97	Free Carrier Dynamics and Energy Transfer to the Si Lattice during Pico and Nanosecond Nd Laser Pulse Irradiation. Physica Status Solidi (B): Basic Research, 1985, 130, 225-233.	0.7	5
98	Generalized wavefront expansion properties and limitations. Meccanica, 1986, 21, 191-199.	1.2	5
99	STATIONARY SOLUTIONS OF HYDRODYNAMIC MODELS FOR SEMICONDUCTOR DEVICE SIMULATION. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 1993, 12, 81-93.	0.5	5
100	Staggered Finite Difference Schemes for Conservation Laws. Journal of Scientific Computing, 2006, 27, 403-418.	1.1	5
101	Structural Simulation of a Bone-Prosthesis System of the Knee Joint. Sensors, 2008, 8, 5897-5926.	2.1	5
102	Numerical Solutions of Partial Differential Equations. , 2009, , .		5
103	BGK models for inert mixtures: Comparison and applications. Kinetic and Related Models, 2021, 14, 895.	0.5	5
104	Central Schemes for Balance Laws. Mathematics in Industry, 2002, , 313-317.	0.1	5
105	HIGH ORDER WELL-BALANCED SCHEMES BASED ON NUMERICAL RECONSTRUCTION OF THE EQUILIBRIUM VARIABLES. , 2010, , .		4
106	Semi-Conservative Finite Volume Schemes for Conservation Laws. SIAM Journal of Scientific Computing, 2019, 41, B576-B600.	1.3	4
107	A meshfree method for the BGK model for rarefied gas dynamics. International Journal of Advances in Engineering Sciences and Applied Mathematics, 2019, 11, 187-197.	0.7	4
108	Accurate numerical methods for the Boltzmann equation. Modeling and Simulation in Science, Engineering and Technology, 2004, , 117-145.	0.4	4

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109	Semi-Lagrangian Approximation of BGK Models for Inert and Reactive Gas Mixtures. Springer Proceedings in Mathematics and Statistics, 2018, , 53-80.	0.1	4
110	Boundary conditions for semi-Lagrangian methods for the BGK model. Communications in Applied and Industrial Mathematics, 2016, 7, 138-164.	0.6	4
111	Central Schemes and Second Order Boundary Conditions for 1D Interface and Piston Problems in Lagrangian Coordinates. Communications in Computational Physics, 2010, 8, 797-822.	0.7	4
112	Point approximation of a space-homogeneous transport equation. Numerische Mathematik, 1989, 56, 763-774.	0.9	3
113	A kinetic approximation of Heleâ€™Shaw flow. Comptes Rendus Mathematique, 2004, 338, 177-182.	0.1	3
114	Gaussian wave packet transform based numerical scheme for the semi-classical SchrÃ¶dinger equation with random inputs. Journal of Computational Physics, 2020, 401, 109015.	1.9	3
115	Convergence estimates of a semi-Lagrangian scheme for the ellipsoidal BGK model for polyatomic molecules. ESAIM: Mathematical Modelling and Numerical Analysis, 2022, 56, 893-942.	0.8	3
116	IMEX Runge-Kutta Schemes and Hyperbolic Systems of Conservation Laws with Stiff Diffusive Relaxation. , 2009, , .		2
117	Highâ€™Order Asymptoticâ€™Preserving Methods for Nonlinear Relaxation from Hyperbolic Systems to Convectionâ€™Diffusion Equations. Lecture Notes in Computational Science and Engineering, 2014, , 1-13.	0.1	2
118	A local velocity grid conservative semi-Lagrangian schemes for BGK model. Journal of Computational Physics, 2022, 460, 111178.	1.9	2
119	Comparison of theoretical and numerical criteria for water wave breaking. Wave Motion, 1987, 9, 261-268.	1.0	1
120	Some remarks on the stability of shock waves. Meccanica, 1990, 25, 83-91.	1.2	1
121	Extrapolation methods for hyperbolic systems with relaxation. Journal of Computational and Applied Mathematics, 1996, 66, 359-375.	1.1	1
122	A REMARK ON "THE PARAMETER DEPENDENCE OF THE COEFFICIENT IN A MODEL FOR CONSTANT PRESSURE STEAM INJECTION IN SOIL". Mathematical Models and Methods in Applied Sciences, 1998, 08, 1317-1321.	1.7	1
123	Special class of solutions of the kinetic equation of a bubbly fluid. Journal of Applied Mechanics and Technical Physics, 2005, 46, 176-184.	0.1	1
124	Comparison between Time Relaxed Monte Carlo Method and Majorant Frequency Scheme methods for the space homogeneous Boltzmann equation. AIP Conference Proceedings, 2005, , .	0.3	1
125	Moving least-squares corrections for smoothed particle hydrodynamics. Annals of Geophysics, 2011, 54, .	0.5	1
126	High Order Central Schemes for Hyperbolic Systems of Conservation Laws. , 1999, , 55-64.		1

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127	A High-Order Semi-Lagrangian Finite Difference Method for Nonlinear Vlasov and BGK Models. Communications on Applied Mathematics and Computation, 2023, 5, 170-198.	0.7	1
128	A novel spectral method for the semiclassical Schrödinger equation based on the Gaussian wave-packet transform. IMA Journal of Numerical Analysis, 0, , .	1.5	1
129	Individual- and pair-based models of epidemic spreading: Master equations and analysis of their forecasting capabilities. Physical Review Research, 2022, 4, .	1.3	1
130	Adaptive energy discretization of the semiconductor Boltzmann equation. Transport Theory and Statistical Physics, 2007, 36, 13-42.	0.4	0
131	Numerical methods for multi scale hyperbolic problems, with application to multi-fluid and sedimentation. AIP Conference Proceedings, 2018, , .	0.3	0
132	Central Runge-Kutta Schemes for Stiff Balance Laws. Mathematics in Industry, 2008, , 226-230.	0.1	0
133	ADER-Runge-Kutta Schemes for Conservation Laws in One Space Dimension. , 2008, , 929-936.		0
134	MOVING BOUNDARY PROBLEMS FOR THE BGK MODEL OF RAREFIED GAS DYNAMICS. World Scientific Series on Nonlinear Science, Series B, 2010, , 145-150.	0.2	0
135	Geophysical Changes in Hydrothermal-Volcanic Areas: A Finite-Difference Ghost-Point Method to Solve Thermo-Poroelastic Equations. Mathematics in Industry, 2016, , 587-594.	0.1	0