Giovanni Russo

List of Publications by Year
in descending order

135	5,142	101384	102304
papers	citations	36 h-index	66 g-index

141	141	141	2554
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	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
2	Lack of practical identifiability may hamper reliable predictions in COVID-19 epidemic models. Science Advances, 2022, 8, eabg5234.	4.7	12
3	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
4	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
5	A local velocity grid conservative semi-Lagrangian schemes for BGK model. Journal of Computational Physics, 2022, 460, 111178.	1.9	2
6	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
7	Individual- and pair-based models of epidemic spreading: Master equationsÂand analysis of their forecasting capabilities. Physical Review Research, 2022, 4, .	1.3	1
8	BGK models for inert mixtures: Comparison and applications. Kinetic and Related Models, 2021, 14, 895.	0.5	5
9	Conservative semi-Lagrangian schemes for kinetic equations Part I: Reconstruction. Journal of Computational Physics, 2021, 432, 110159.	1.9	14
10	Conservative semi-Lagrangian schemes for kinetic equations Part II: Applications. Journal of Computational Physics, 2021, 436, 110281.	1.9	13
11	Collocation Methods for High-Order Well-Balanced Methods for Systems of Balance Laws. Mathematics, 2021, 9, 1799.	1.1	9
12	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
13	Interaction of rigid body motion and rarefied gas dynamics based on the BGK model. Mathematics in Engineering, 2020, 2, 203-229.	0.5	6
14	Semi-Conservative Finite Volume Schemes for Conservation Laws. SIAM Journal of Scientific Computing, 2019, 41, B576-B600.	1.3	4
15	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
16	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
17	Linearly implicit all Mach number shock capturing schemes for the Euler equations. Journal of Computational Physics, 2019, 393, 278-312.	1.9	19
18	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

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19	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
20	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
21	Implicit-Explicit Integral Deferred Correction Methods for Stiff Problems. SIAM Journal of Scientific Computing, 2018, 40, A787-A816.	1.3	13
22	High order finite volume schemes for balance laws with stiff relaxation. Computers and Fluids, 2018, 169, 155-168.	1.3	6
23	Numerical methods for multi scale hyperbolic problems, with application to multi-fluid and sedimentation. AIP Conference Proceedings, 2018, , .	0.3	0
24	Convergence of a Semi-Lagrangian Scheme for the Ellipsoidal BGK Model of the Boltzmann Equation. SIAM Journal on Numerical Analysis, 2018, 56, 3580-3610.	1.1	16
25	All Mach Number Second Order Semi-implicit Scheme for the Euler Equations of Gas Dynamics. Journal of Scientific Computing, 2018, 77, 850-884.	1.1	53
26	Semi-Lagrangian Approximation of BGK Models for Inert and Reactive Gas Mixtures. Springer Proceedings in Mathematics and Statistics, 2018, , 53-80.	0.1	4
27	Approximate Taylor methods for ODEs. Computers and Fluids, 2017, 159, 156-166.	1.3	6
28	A Unified IMEX Runge–Kutta Approach for Hyperbolic Systems with Multiscale Relaxation. SIAM Journal on Numerical Analysis, 2017, 55, 2085-2109.	1.1	35
29	Central Weighted ENO Schemes for Hyperbolic Conservation Laws on Fixed and Moving Unstructured Meshes. SIAM Journal of Scientific Computing, 2017, 39, A2564-A2591.	1.3	71
30	A High Order Multi-Dimensional Characteristic Tracing Strategy for the Vlasovâ€“Poisson System. Journal of Scientific Computing, 2017, 71, 414-434.	1.1	19
31	A hydro-geophysical simulator for fluid and mechanical processes in volcanic areas. Journal of Mathematics in Industry, 2016, 6, .	0.7	9
32	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
33	High Order Semi-implicit Schemes for Time Dependent Partial Differential Equations. Journal of Scientific Computing, 2016, 68, 975-1001.	1.1	75
34	Adaptive Mesh Refinement for Hyperbolic Systems Based on Third-Order Compact WENO Reconstruction. Journal of Scientific Computing, 2016, 66, 692-724.	1.1	81
35	Boundary conditions for semi-Lagrangian methods for the BGK model. Communications in Applied and Industrial Mathematics, 2016, 7, 138-164.	0.6	4
36	High order semi-Lagrangian methods for the BGK equation. Communications in Mathematical Sciences, 2016, 14, 389-414.	0.5	32

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37	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
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	High-Order Asymptotic-Preserving Methods for Fully Nonlinear Relaxation Problems. SIAM Journal of Scientific Computing, 2014, 36, A377-A395.	1.3	36
40	The Gaussian wave packet transform: Efficient computation of the semi-classical limit of the SchrÃ¶dinger equation. Part 2. Multidimensional case. Journal of Computational Physics, 2014, 257, 1022-1038.	1.9	8
41	A Second Order Finite-Difference Ghost-Point Method for Elasticity Problems on Unbounded Domains with Applications to Volcanology. Communications in Computational Physics, 2014, 16, 983-1009.	0.7	19
42	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
43	Flux-Explicit IMEX Runge--Kutta Schemes for Hyperbolic to Parabolic Relaxation Problems. SIAM Journal on Numerical Analysis, 2013, 51, 163-190.	1.1	35
44	Implicit-Explicit Runge--Kutta Schemes for Hyperbolic Systems and Kinetic Equations in the Diffusion Limit. SIAM Journal of Scientific Computing, 2013, 35, A22-A51.	1.3	113
45	Finite-difference ghost-point multigrid methods on Cartesian grids for elliptic problems in arbitrary domains. Journal of Computational Physics, 2013, 241, 464-501.	1.9	55
46	The Gaussian wave packet transform: Efficient computation of the semi-classical limit of the SchrÃ¶dinger equation. Part 1 â€“ Formulation and the one dimensional case. Journal of Computational Physics, 2013, 233, 192-209.	1.9	11
47	Graph Metrics for Temporal Networks. Understanding Complex Systems, 2013, , 15-40.	0.3	159
48	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
49	Central Schemes for Nonconservative Hyperbolic Systems. SIAM Journal of Scientific Computing, 2012, 34, B523-B558.	1.3	15
50	Components in time-varying graphs. Chaos, 2012, 22, 023101.	1.0	94
51	Sensitivity analysis of the MAGFLOW Cellular Automaton model for lava flow simulation. Environmental Modelling and Software, 2012, 35, 122-131.	1.9	44
52	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
53	Moving least-squares corrections for smoothed particle hydrodynamics. Annals of Geophysics, 2011, 54, .	0.5	1
54	Porting and optimizing MAGFLOW on CUDA. Annals of Geophysics, 2011, 54, .	0.5	10

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55	HIGH ORDER WELL-BALANCED SCHEMES BASED ON NUMERICAL RECONSTRUCTION OF THE EQUILIBRIUM VARIABLES. , 2010, , .		4
56	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
57	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
58	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
59	IMEX Runge-Kutta Schemes and Hyperbolic Systems of Conservation Laws with Stiff Diffusive Relaxation. , 2009, , .		2
60	Numerical Solutions of Partial Differential Equations. , 2009, , .		5
61	On a Class of Uniformly Accurate IMEX Rungeâ€“Kutta Schemes and Applications to Hyperbolic Systems with Relaxation. SIAM Journal of Scientific Computing, 2009, 31, 1926-1945.	1.3	82
62	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
63	Numerical solutions of the Boltzmann equation: comparison of different algorithms. European Journal of Mechanics, B/Fluids, 2008, 27, 62-74.	1.2	23
64	Structural Simulation of a Bone-Prosthesis System of the Knee Joint. Sensors, 2008, 8, 5897-5926.	2.1	5
65	Central Rungeâ€”Kutta Schemes for Stiff Balance Laws. Mathematics in Industry, 2008, , 226-230.	0.1	0
66	ADERâ€“Rungeâ€“Kutta Schemes for Conservation Laws in One Space Dimension. , 2008, , 929-936.		0
67	Adaptive energy discretization of the semiconductor Boltzmann equation. Transport Theory and Statistical Physics, 2007, 36, 13-42.	0.4	0
68	Implicitâ€“explicit numerical schemes for jumpâ€“diffusion processes. Calcolo, 2007, 44, 33-57.	0.6	71
69	Computation of strained epitaxial growth in three dimensions by kinetic Monte Carlo. Journal of Computational Physics, 2006, 214, 809-828.	1.9	67
70	Staggered Finite Difference Schemes for Conservation Laws. Journal of Scientific Computing, 2006, 27, 403-418.	1.1	5
71	A Multigrid-Fourier Method for the Computation of Elastic Fields with Application to Heteroepitaxy. Multiscale Modeling and Simulation, 2006, 5, 130-148.	0.6	16
72	Central schemes for conservation laws with application to shallow water equations. , 2005, , 225-246.		33

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73	Discretization of Semiconductor Device Problems (II). Handbook of Numerical Analysis, 2005, , 443-522.	0.9	7
74	Simulation of faceted film growth in three dimensions: microstructure, morphology and texture. Acta Materialia, 2005, 53, 1191-1204.	3.8	89
75	Implicit-explicit runge-kutta schemes and applications to hyperbolic systems with relaxation. Journal of Scientific Computing, 2005, 25, 129-155.	1.1	27
76	Implicitâ€“Explicit Rungeâ€“Kutta Schemes and Applications to Hyperbolic Systems with Relaxation. Journal of Scientific Computing, 2005, 25, 129-155.	1.1	369
77	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
78	Comparison betweenTime Relaxed Monte Carlo Method and Majorant Frequency Scheme methods for the space homogeneous Boltzmann equation. AIP Conference Proceedings, 2005, , .	0.3	1
79	Plane Couette Flow Computations by TRMC and MFS Methods. AIP Conference Proceedings, 2005, , .	0.3	6
80	Central Runge--Kutta Schemes for Conservation Laws. SIAM Journal of Scientific Computing, 2005, 26, 979-999.	1.3	27
81	A Weighted Essentially Nonoscillatory, Large Time-Step Scheme for Hamilton--Jacobi Equations. SIAM Journal of Scientific Computing, 2005, 27, 1071-1091.	1.3	53
82	Quasicontinuum Monte Carlo: A method for surface growth simulations. Physical Review B, 2004, 69, .	1.1	23
83	ANALYTICAL AND NUMERICAL SOLUTIONS OF THE SHALLOW WATER EQUATIONS FOR 2D ROTATIONAL FLOWS. Mathematical Models and Methods in Applied Sciences, 2004, 14, 1451-1479.	1.7	16
84	A kinetic approximation of Heleâ€“Shaw flow. Comptes Rendus Mathematique, 2004, 338, 177-182.	0.1	3
85	Accurate numerical methods for the Boltzmann equation. Modeling and Simulation in Science, Engineering and Technology, 2004, , 117-145.	0.4	4
86	High order numerical methods for the space non-homogeneous Boltzmann equation. Journal of Computational Physics, 2003, 186, 457-480.	1.9	86
87	High Order Asymptotically Strong-Stability-Preserving Methods for Hyperbolic Systems with Stiff Relaxation. , 2003, , 241-251.		7
88	A Fourth-Order Central WENO Scheme for Multidimensional Hyperbolic Systems of Conservation Laws. SIAM Journal of Scientific Computing, 2002, 24, 480-506.	1.3	121
89	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
90	Central Schemes for Balance Laws. Mathematics in Industry, 2002, , 313-317.	0.1	5

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91	Time Relaxed Monte Carlo Methods for the Boltzmann Equation. SIAM Journal of Scientific Computing, 2001, 23, 1253-1273.	1.3	74
92	An introduction to Monte Carlo method for the Boltzmann equation. ESAIM: Proceedings and Surveys, 2001, 10, 35-75.	0.4	65
93	Central Schemes for Balance Laws. , 2001, , 821-829.		19
94	Asymptotic preserving Monte Carlo methods for the Boltzmann equation. Transport Theory and Statistical Physics, 2000, 29, 415-430.	0.4	38
95	A Remark on Computing Distance Functions. Journal of Computational Physics, 2000, 163, 51-67.	1.9	306
96	Fast Spectral Methods for the Fokkerâ€“Planckâ€“Landau Collision Operator. Journal of Computational Physics, 2000, 165, 216-236.	1.9	82
97	On the behavior of the total variation in CWENO methods for conservation laws. Applied Numerical Mathematics, 2000, 33, 407-414.	1.2	22
98	A third order central WENO scheme for 2D conservation laws. Applied Numerical Mathematics, 2000, 33, 415-421.	1.2	58
99	CROSS-VALIDATION OF NUMERICAL SCHEMES FOR EXTENDED HYDRODYNAMICAL MODELS OF SEMICONDUCTORS. Mathematical Models and Methods in Applied Sciences, 2000, 10, 833-861.	1.7	17
100	NUMERICAL SOLUTION FOR HYDRODYNAMICAL MODELS OF SEMICONDUCTORS. Mathematical Models and Methods in Applied Sciences, 2000, 10, 1099-1120.	1.7	31
101	On the stability of spectral methods for the homogeneous Boltzmann equation. Transport Theory and Statistical Physics, 2000, 29, 431-447.	0.4	29
102	Extended Hydrodynamical Model of Carrier Transport in Semiconductors. SIAM Journal on Applied Mathematics, 2000, 61, 74-101.	0.8	73
103	Numerical Solution of the Boltzmann Equation I: Spectrally Accurate Approximation of the Collision Operator. SIAM Journal on Numerical Analysis, 2000, 37, 1217-1245.	1.1	148
104	Compact Central WENO Schemes for Multidimensional Conservation Laws. SIAM Journal of Scientific Computing, 2000, 22, 656-672.	1.3	259
105	A Level-Set Method for the Evolution of Faceted Crystals. SIAM Journal of Scientific Computing, 2000, 21, 2073-2095.	1.3	47
106	Central Schemes for Balance Laws of Relaxation Type. SIAM Journal on Numerical Analysis, 2000, 38, 1337-1356.	1.1	95
107	Polynomial upwind schemes for hyperbolic systems. Comptes Rendus Mathematique, 1999, 328, 479-483.	0.5	46
108	High-Order Central Schemes for Hyperbolic Systems of Conservation Laws. SIAM Journal of Scientific Computing, 1999, 21, 294-322.	1.3	85

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109	Impulse formulation of the Euler equations: general properties and numerical methods. Journal of Fluid Mechanics, 1999, 391, 189-209.	1.4	39
110	Central WENO schemes for hyperbolic systems of conservation laws. ESAIM: Mathematical Modelling and Numerical Analysis, 1999, 33, 547-571.	0.8	313
111	High Order Central Schemes for Hyperbolic Systems of Conservation Laws. , 1999, , 55-64.		1
112	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
113	Domain Decomposition Operator Splittings for the Solution of Parabolic Equations. SIAM Journal of Scientific Computing, 1998, 19, 912-932.	1.3	45
114	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
115	Hyperbolic Hydrodynamical Model of Carrier Transport in Semiconductors. VLSI Design, 1998, 8, 521-525.	0.5	21
116	Uniformly Accurate Schemes for Hyperbolic Systems with Relaxation. SIAM Journal on Numerical Analysis, 1997, 34, 246-281.	1.1	138
117	Kinetic Theory for Bubbly Flow I: Collisionless case. SIAM Journal on Applied Mathematics, 1996, 56, 327-357.	0.8	56
118	Kinetic Theory for Bubbly Flow II: Fluid Dynamic Limit. SIAM Journal on Applied Mathematics, 1996, 56, 358-371.	0.8	13
119	Extrapolation methods for hyperbolic systems with relaxation. Journal of Computational and Applied Mathematics, 1996, 66, 359-375.	1.1	1
120	Fast Triangulated Vortex Methods for the 2D Euler Equations. Journal of Computational Physics, 1994, 111, 291-323.	1.9	32
121	A Deterministic Vortex Method for the Navier-Stokes Equations. Journal of Computational Physics, 1993, 108, 84-94.	1.9	13
122	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
123	A particle method for collisional kinetic equations. I. Basic theory and one-dimensional results. Journal of Computational Physics, 1990, 87, 270-300.	1.9	22
124	Some remarks on the stability of shock waves. Meccanica, 1990, 25, 83-91.	1.2	1
125	Deterministic diffusion of particles. Communications on Pure and Applied Mathematics, 1990, 43, 697-733.	1.2	43
126	Point approximation of a space-homogeneous transport equation. Numerische Mathematik, 1989, 56, 763-774.	0.9	3

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127	Generalized wavefront expansion II: The propagation of step shocks. Wave Motion, 1988, 10, 3-18.	1.0	11
128	Stability properties of relativistic shock waves - Applications. Astrophysical Journal, 1988, 334, 707.	1.6	14
129	Stability properties of relativistic shock waves: Basic results. Physics of Fluids, 1987, 30, 2406.	1.4	34
130	Linear stability for plane relativistic shock waves. Physics of Fluids, 1987, 30, 1045.	1.4	32
131	Comparison of theoretical and numerical criteria for water wave breaking. Wave Motion, 1987, 9, 261-268.	1.0	1
132	Generalized wavefront expansion I. Higher order corrections for the propagation of weak shock waves. Wave Motion, 1986, 8, 243-258.	1.0	16
133	Generalized wavefront expansion properties and limitations. Meccanica, 1986, 21, 191-199.	1.2	5
134	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
135	A novel spectral method for the semiclassical SchrÃ¶dinger equation based on the Gaussian wave-packet transform. IMA Journal of Numerical Analysis, 0, , .	1.5	1