Massimiliano Giona

List of Publications by Year
in descending order

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131	2,236	304368	253896
papers	citations	22	43
		h-index	g-index

131	131	131	1704
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Inertial effects and long-term transport properties of particle motion in washboard potential. Physica A: Statistical Mechanics and Its Applications, 2022, 585, 126407.	1.2	2
2	Spectral Properties of Stochastic Processes Possessing Finite Propagation Velocity. Entropy, 2022, 24, 201.	1.1	0
3	Invariant manifold approach for quantifying the dynamics of highly inertial particles in steady and time-periodic incompressible flows. Chaos, 2022, 32, 023121.	1.0	1
4	Hydrodynamic Green functions: paradoxes in unsteady Stokes conditions and infinite propagation velocity in incompressible viscous models. Meccanica, 2022, 57, 1055-1069.	1.2	3
5	Stochastic Modeling of Particle Transport in Confined Geometries: Problems and Peculiarities. Fluids, 2022, 7, 105.	0.8	3
6	Extended Poisson-Kac Theory: A Unifying Framework for Stochastic Processes with Finite Propagation Velocity. Physical Review X, 2022, 12, .	2.8	4
7	On the dynamic role of energy in underdamped particle motion. Physica A: Statistical Mechanics and Its Applications, 2022, 597, 127285.	1.2	0
8	Taming Taylor-Aris dispersion through chaotic advection. Journal of Chromatography A, 2022, 1673, 463110.	1.8	8
9	Swelling and Drug Release in Polymers through the Theory of Poissonâ€“Kac Stochastic Processes. Gels, 2021, 7, 32.	2.1	5
10	Generalized Counting Processes in a Stochastic Environment. Mathematics, 2021, 9, 2573.	1.1	5
11	On the long-term simulation of stochastic differential equations for predicting effective dispersion coefficients. Physica A: Statistical Mechanics and Its Applications, 2020, 543, 123392.	1.2	6
12	Space-Time Inversion of Stochastic Dynamics. Symmetry, 2020, 12, 839.	1.1	0
13	Covariance and Spinorial Statistical Description of Simple Relativistic Stochastic Kinematics. Fluctuation and Noise Letters, 2020, 19, 2050042.	1.0	2
14	Age representation of LÃ©vy walks: partial density waves, relaxation and first passage time statistics. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 384001.	0.7	8
15	Laminar dispersion at low and high Peclet numbers in a sinusoidal microtube: Point-size versus finite-size particles. Physics of Fluids, 2019, 31, .	1.6	18
16	Multiphase partitions of lattice random walks. Europhysics Letters, 2019, 126, 50002.	0.7	2
17	From simple lattice models to systems of interacting particles: the role of stochastic regularity in transport models. European Physical Journal: Special Topics, 2019, 228, 93-109.	1.2	1
18	Exact moment analysis of transient dispersion properties in periodic media. Physics of Fluids, 2019, 31, .	1.6	21

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19	Hyperbolic heat/mass transport and stochastic modelling - Three simple problems. Mathematics in Engineering, 2019, 1, 224-251.	0.5	3
20	Taming axial dispersion in hydrodynamic chromatography columns through wall patterning. Physics of Fluids, 2018, 30, .	1.6	21
21	Inertia-driven enhancement of mixing efficiency in microfluidic cross-junctions: a combined Eulerian/Lagrangian approach. Microfluidics and Nanofluidics, 2018, 22, 1.	1.0	10
22	Application of the theory of stochastic processes possessing finite propagation velocity to transport problems in polymeric systems. AIP Conference Proceedings, 2018, , .	0.3	0
23	Lattice random walk: an old problem with a future ahead. Physica Scripta, 2018, 93, 095201.	1.2	5
24	Variational principles and Lagrangian functions for stochastic processes and their dissipative statistical descriptions. Physica A: Statistical Mechanics and Its Applications, 2017, 473, 561-577.	1.2	10
25	Kac limit and thermodynamic characterization of stochastic dynamics driven by Poisson-Kac fluctuations. European Physical Journal: Special Topics, 2017, 226, 2299-2310.	1.2	2
26	Space-time transport schemes and homogenization: II. Extension of the theory and applications. Journal of Statistical Mechanics: Theory and Experiment, 2017, 2017, 033204.	0.9	4
27	Markovian nature, completeness, regularity and correlation properties of generalized Poisson-Kac processes. Journal of Statistical Mechanics: Theory and Experiment, 2017, 2017, 023205.	0.9	2
28	Singular eigenvalue limit of advection-diffusion operators and properties of the strange eigenfunctions in globally chaotic flows. European Physical Journal: Special Topics, 2017, 226, 2247-2262.	1.2	6
29	Space-time transport schemes and homogenization. I: general theory of Markovian and non-Markovian processes. Journal of Statistical Mechanics: Theory and Experiment, 2017, 2017, 033210.	0.9	2
30	Space-time-modulated stochastic processes. Physical Review E, 2017, 96, 042132.	0.8	5
31	Stochastic foundations of undulatory transport phenomena: generalized Poissonâ€“Kac processesâ€”part II Irreversibility, norms and entropies. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 335003.	0.7	15
32	Stochastic foundations of undulatory transport phenomena: generalized Poissonâ€“Kac processesâ€”part III extensions and applications to kinetic theory and transport. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 335004.	0.7	16
33	Stochastic foundations of undulatory transport phenomena: generalized Poissonâ€“Kac processesâ€”part I basic theory. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 335002.	0.7	18
34	Relativistic analysis of stochastic kinematics. Physical Review E, 2017, 96, 042133.	0.8	8
35	On the influence of reflective boundary conditions on the statistics of Poissonâ€“Kac diffusion processes. Physica A: Statistical Mechanics and Its Applications, 2016, 450, 148-164.	1.2	8
36	Energetics of Poissonâ€“Kac Stochastic Processes Possessing Finite Propagation Velocity. Journal of Non-Equilibrium Thermodynamics, 2016, 41, .	2.4	2

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37	One-dimensional hyperbolic transport: Positivity and admissible boundary conditions derived from the wave formulation. Physica A: Statistical Mechanics and Its Applications, 2016, 449, 176-191.	1.2	14
38	Generalized Poissonâ€“Kac Processes: Basic Properties and Implications in Extended Thermodynamics and Transport. Journal of Non-Equilibrium Thermodynamics, 2016, 41, 107-114.	2.4	20
39	Dispersion of overdamped diffusing particles in channel flows coupled to transverse acoustophoretic potentials: Transport regimes and scaling anomalies. Physical Review E, 2015, 92, 032104.	0.8	1
40	Effective dispersion and separation resolution in continuous particle fractionation. Microfluidics and Nanofluidics, 2015, 19, 1035-1046.	1.0	17
41	Analysis of the advectionâ€“diffusion mixing by the mapping method formalism in 3D openâ€flow devices. AICHE Journal, 2014, 60, 387-407.	1.8	11
42	Quantifying dispersion of finite-sized particles in deterministic lateral displacement microflow separators through Brennerâ€™s macrotransport paradigm. Microfluidics and Nanofluidics, 2013, 15, 431-449.	1.0	23
43	Fast Distributed Average Consensus Algorithms Based on Advection-Diffusion Processes. IEEE Transactions on Signal Processing, 2010, 58, 826-842.	3.2	61
44	Convection-Dominated Dispersion Regime in Wide-Bore Chromatography: A Transport-Based Approach To Assess the Occurrence of Slip Flows in Microchannels. Analytical Chemistry, 2009, 81, 8009-8014.	3.2	25
45	Advection-diffusion in chaotic flows. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2009, , 149-217.	0.3	0
46	On the estimate of mixing length in interdigital micromixers. Chemical Engineering Journal, 2008, 138, 523-537.	6.6	6
47	Feasibility, efficiency and transportability of short-horizon optimal mixing protocols. Journal of Fluid Mechanics, 2008, 597, 199-231.	1.4	33
48	Influence of surface heterogeneity in electroosmotic flowsâ€”Implications in chromatography, fluid mixing, and chemical reactions in microdevices. Applied Surface Science, 2007, 253, 5785-5790.	3.1	2
49	Invariant structures and multifractal measures in 2d mixing systems. , 2005, , 141-155.		0
50	On the mechanism of fast oxygen storage and release in ceria-zirconia model catalysts. Applied Catalysis B: Environmental, 2004, 52, 225-237.	10.8	145
51	Structural modelling for the dissolution of non-porous ores: dissolution with sporulation. Chemical Engineering Journal, 2004, 99, 89-104.	6.6	11
52	The sporulation model for manganiferous ore dissolution. Chemical Engineering Science, 2004, 59, 5107-5112.	1.9	2
53	Eigenvalueâ€“eigenfunction analysis of infinitely fast reactions and micromixing regimes in regular and chaotic bounded flows. Chemical Engineering Science, 2004, 59, 2125-2144.	1.9	41
54	Effects of self-stress on hydrogen diffusion in Pd membranes in the coexistence of Î± and Î² phases. Journal of Alloys and Compounds, 2004, 368, 287-297.	2.8	6

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55	Reconstruction of chaotic time series by neural models: a case study. Neurocomputing, 2003, 55, 581-591.	3.5	25
56	Necrosis evolution during high-temperature hyperthermia through implanted heat sources. IEEE Transactions on Biomedical Engineering, 2003, 50, 305-315.	2.5	9
57	Steady-state concentration profiles of hydrogen in tubular metallic membranes. International Journal of Hydrogen Energy, 2003, 28, 1279-1284.	3.8	10
58	Closed-form solution of abrasion and abrasionâ€“dissolution kinetic models. Chemical Engineering Journal, 2003, 94, 127-137.	6.6	3
59	Experimental validation of a correlation-based model for permeability. Chemical Engineering Science, 2003, 58, 2449-2454.	1.9	1
60	Stress-induced diffusion of hydrogen in metallic membranes: cylindrical vs. planar formulation. I. Journal of Alloys and Compounds, 2003, 358, 268-280.	2.8	22
61	Stress-induced diffusion of hydrogen in metallic membranes: cylindrical vs. planar formulation. II. Journal of Alloys and Compounds, 2003, 358, 157-167.	2.8	5
62	EXTERIOR ALGEBRA-BASED ALGORITHMS TO ESTIMATE LIAPUNOV SPECTRA AND STRETCHING STATISTICS IN HIGH-DIMENSIONAL AND DISTRIBUTED SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2002, 12, 353-368.	0.7	8
63	Modified model for the regulation of the tryptophan operon inEscherichia coli. Biotechnology and Bioengineering, 2002, 80, 297-304.	1.7	13
64	Câˆž-Interpolation of Discrete Fields on Regular and Irregular Grids. Journal of Computational Physics, 2002, 176, 145-169.	1.9	4
65	A closed-form solution of population-balance models for the dissolution of polydisperse mixtures. Chemical Engineering Journal, 2002, 87, 275-284.	6.6	13
66	Two-layer shrinking-core model: parameter estimation for the reaction order in leaching processes. Chemical Engineering Journal, 2002, 90, 231-240.	6.6	36
67	A spectral approach to reaction/diffusion kinetics in chaotic flows. Computers and Chemical Engineering, 2002, 26, 125-139.	2.0	34
68	Tracer Dispersion in Stirred Tank Reactors: Asymptotic Properties and Mixing Characterization. Canadian Journal of Chemical Engineering, 2002, 80, 580-590.	0.9	7
69	Some Insight into the Effects of Oxygen Diffusion in the Reduction Kinetics of Ceria. Industrial & Engineering Chemistry Research, 2001, 40, 4828-4835.	1.8	26
70	Geometric and statistical properties in the evolution of material surfaces in three-dimensional chaotic flows. Physics of Fluids, 2001, 13, 1254-1262.	1.6	2
71	Coarse-grained formulation for the time evolution of intermaterial contact area density in mixing systems. Computer Aided Chemical Engineering, 2000, , 451-456.	0.3	0
72	A novel approach to the analysis of distillation columns for multicomponent mixtures. Computer Aided Chemical Engineering, 2000, 8, 529-534.	0.3	0

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73	Invariant properties of a class of exactly solvable mixing transformations â€“ A measure-theoretical approach to model the evolution of material lines advected by chaotic flows. Chaos, Solitons and Fractals, 2000, 11, 607-630.	2.5	4
74	Time-series analysis approach for the identification of flooding/loading transition in gasâ€“liquid stirred tank reactors. Chemical Engineering Science, 2000, 55, 5793-5802.	1.9	40
75	The geometry of mixing in 2-d time-periodic chaotic flows. Chemical Engineering Science, 2000, 55, 381-389.	1.9	11
76	The intermaterial area density generated by time- and spatially periodic 2D chaotic flows. Chemical Engineering Science, 2000, 55, 1497-1508.	1.9	51
77	A Model for the Temperature-Programmed Reduction of Low and High Surface Area Ceria. Journal of Catalysis, 2000, 193, 273-282.	3.1	288
78	Contour Integrals and Vector Calculus on Fractal Curves and Interfaces. Chaos, Solitons and Fractals, 1999, 10, 1349-1370.	2.5	8
79	The geometry of mixing in time-periodic chaotic flows. I. Asymptotic directionality in physically realizable flows and global invariant properties. Physica D: Nonlinear Phenomena, 1999, 132, 298-324.	1.3	48
80	Vector Analysis on Fractal Curves. , 1999, , 155-170.		0
81	Mixing in Laminar Chaotic Flows: Differentiable Structures and Multifractal Features. , 1999, , 263-275.		0
82	Non-uniform stationary measure properties of chaotic area-preserving dynamical systems. Physica A: Statistical Mechanics and Its Applications, 1998, 254, 451-465.	1.2	15
83	Long-range correlation properties of area-preserving chaotic systems. Physica A: Statistical Mechanics and Its Applications, 1998, 253, 143-153.	1.2	11
84	Analytic expression for the short-time rate of growth of the intermaterial contact perimeter in two-dimensional chaotic flows and Hamiltonian systems. Physical Review E, 1998, 58, 447-458.	0.8	27
85	Models of adsorption kinetics on rough surfaces. Studies in Surface Science and Catalysis, 1997, 109, 241-250.	1.5	2
86	Projected Measures: A Simple Way to Characterize Fractal Structures and Interfaces. Fractals, 1997, 05, 295-308.	1.8	0
87	Chemical Engineering, Fractal and Disordered System Theory. Fractals, 1997, 05, 333-354.	1.8	7
88	Solution of Unsteady-State Shrinking-Core Models by Means of Spectral/Fixed-Point Methods:Â Nonuniform Reactant Distribution and Nonlinear Kinetics. Industrial & Engineering Chemistry Research, 1997, 36, 2452-2465.	1.8	8
89	Deviation from Henry's Law:â€‰ Effects of Energetic Heterogeneity and of Surface Diffusion. Langmuir, 1997, 13, 1138-1144.	1.6	3
90	Reconstruction of Nonhomogeneous Porous Media. Industrial & Engineering Chemistry Research, 1997, 36, 5010-5014.	1.8	1

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91	A Versatile Lattice Simulator for Fluidâ^'Solid Noncatalytic Reactions in Complex Media. Industrial & Engineering Chemistry Research, 1997, 36, 4993-5009.	1.8	3
92	Analytic expression for the structure factor and for the moment-generating function of fractal sets and multifractal measures. Journal of Physics A, 1997, 30, 4293-4312.	1.6	6
93	Thermodynamics and kinetics of adsorption in the presence of geometric roughness. Separation and Purification Technology, 1996, 6, 99-110.	0.7	5
94	Exact solution of linear transport equations in fractal mediaâ€"III. Adsorption and chemical reaction. Chemical Engineering Science, 1996, 51, 5065-5076.	1.9	22
95	Closed-form solution for the reconstruction problem in porous media. AICHE Journal, 1996, 42, 1407-1415.	1.8	28
96	Exact solution of linear transport equations in fractal mediaâ€"I. Renormalization analysis and general theory. Chemical Engineering Science, 1996, 51, 4717-4729.	1.9	36
97	Exact solution of linear transport equations in fractal mediaâ€"II. Diffusion and convection. Chemical Engineering Science, 1996, 51, 4731-4744.	1.9	24
98	Transport phenomena in fractal and heterogeneous mediaâ€"input/output renormalization and exact results. Chaos, Solitons and Fractals, 1996, 7, 1371-1396.	2.5	19
99	Analysis of controlled release in disordered structures: a percolation model. Journal of Membrane Science, 1996, 113, 21-30.	4.1	21
100	Controlled release of theophylline from water-swollen scleroglucan matrices. Journal of Membrane Science, 1996, 113, 7-20.	4.1	12
101	Analysis of linear transport phenomena on fractals. The Chemical Engineering Journal and the Biochemical Engineering Journal, 1996, 64, 45-61.	0.1	5
102	A predictive model for permeability of correlated porous media. The Chemical Engineering Journal and the Biochemical Engineering Journal, 1996, 64, 7-19.	0.1	5
103	Adsorption Kinetics on Fractal Surfaces. The Journal of Physical Chemistry, 1996, 100, 16690-16699.	2.9	20
104	Convection-diffusion transport in disordered structures: Numerical analysis based on the exit-time equation. Chemical Engineering Science, 1995, 50, 1001-1011.	1.9	12
105	Two-step adsorption models in molecular sieves. The Chemical Engineering Journal and the Biochemical Engineering Journal, 1995, 58, 21-32.	0.1	2
106	Fractal calculus on [0, 1]. Chaos, Solitons and Fractals, 1995, 5, 987-1000.	2.5	16
107	INFLUENCE OF GEOMETRIC AND ENERGETIC HETEROGENEITY ON ADSORPTION ISOTHERMS. Fractals, 1995, 03, 235-250.	1.8	12
108	Size-Dependent Adsorption Models in Microporous Materials. 1. Thermodynamic Consistency and Theoretical Analysis. Industrial & Engineering Chemistry Research, 1995, 34, 3848-3855.	1.8	7

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109	Size-Dependent Adsorption Models in Microporous Materials. 2. Comparison with Experimental Data. Industrial & Engineering Chemistry Research, 1995, 34, 3856-3864.	1.8	4
110	THE APPLICATION OF DIFFUSIONAL TECHNIQUES IN TIME-SERIES ANALYSIS TO IDENTIFY COMPLEX FLUID DYNAMIC REGIMES. Fractals, 1994, 02, 503-520.	1.8	11
111	Multicomponent percolation: Probabilistic properties and application to nonisothermal reactions in granular materials. Physical Review E, 1994, 49, 5287-5294.	0.8	2
112	Simplified analysis of chromatographic-column dynamics. Chemical Engineering Science, 1994, 49, 541-547.	1.9	3
113	An energy-barrier model of biased transport in disordered systems. Chaos, Solitons and Fractals, 1994, 4, 461-469.	2.5	2
114	Local porosity analysis of disordered porous matrices. Studies in Surface Science and Catalysis, 1994, 87, 197-206.	1.5	0
115	Continuous Model for Complex Mixture Adsorption. Industrial & Engineering Chemistry Research, 1994, 33, 2764-2770.	1.8	10
116	Stochastic Analysis of Dispersion in Size-Exclusion Chromatographic Columns. Studies in Surface Science and Catalysis, 1994, 87, 373-382.	1.5	0
117	Influence of local fields on macroscopic transport coefficients. Chemical Engineering Science, 1993, 48, 1933-1943.	1.9	4
118	Transport in porous packings: Statistical characterization of transport, role of fluctuation and data analysis. Environmetrics, 1993, 4, 255-277.	0.6	0
119	Some observations on quantum mechanics in disordered systems. Chaos, Solitons and Fractals, 1993, 3, 203-209.	2.5	2
120	MONTE CARLO SIMULATION OF AGGREGATION PROCESSES STRUCTURAL PROPERTIES OF DEPOSITIONAL AGGREGATES. Chemical Engineering Communications, 1993, 121, 219-234.	1.5	1
121	FIXED POINT METHOD IN STEADY STATE ANALYSIS. APPLICATION TO CATALYST PELLETS. Chemical Engineering Communications, 1993, 122, 57-67.	1.5	1
122	IFS-Simulation of Transport Phenomena on Complex Fractal Media. Molecular Simulation, 1992, 8, 265-271.	0.9	2
123	Fractional diffusion equation for transport phenomena in random media. Physica A: Statistical Mechanics and Its Applications, 1992, 185, 87-97.	1.2	194
124	Fractional diffusion equation and relaxation in complex viscoelastic materials. Physica A: Statistical Mechanics and Its Applications, 1992, 191, 449-453.	1.2	157
125	A theory of transport phenomena in disordered systems. The Chemical Engineering Journal, 1992, 49, 1-10.	0.4	40
126	Influence of pore-network topology on the reaction-diffusion kinetics in porous pellets. Chemical Engineering Science, 1992, 47, 2623-2628.	1.9	6

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127	First-order reactionâ€”diffusion kinetics in complex fractal media. Chemical Engineering Science, 1992, 47, 1503-1515.	1.9	65
128	functional reconstruction of oscillating reaction: prediction and control of chaotic kinetics. Chemical Engineering Science, 1992, 47, 2469-2474.	1.9	4
129	Multifractal analysis of frequency spectra. Journal of Non-Crystalline Solids, 1991, 131-133, 71-75.	1.5	1
130	Statistical analysis of anomalous transport phenomena in complex media. AICHE Journal, 1991, 37, 1249-1254.	1.8	11
131	Functional reconstruction and local prediction of chaotic time series. Physical Review A, 1991, 44, 3496-3502.	1.0	75