

Gian Paolo Beretta

List of Publications by Year in descending order

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Version: 2024-02-01

80
papers

1,473
citations

331538

21
h-index

360920

35
g-index

81
all docs

81
docs citations

81
times ranked

691
citing authors

#	ARTICLE	IF	CITATIONS
1	Turbulent flame propagation and combustion in spark ignition engines. <i>Combustion and Flame</i> , 1983, 52, 217-245.	2.8	161
2	Quantum thermodynamics. A new equation of motion for a single constituent of matter. <i>Societa Italiana Di Fisica Nuovo Cimento B-General Physics, Relativity Astronomy and Mathematical Physics and Methods</i> , 1984, 82, 169-191.	0.2	81
3	Nonlinear quantum evolution equations to model irreversible adiabatic relaxation with maximal entropy production and other nonunitary processes. <i>Reports on Mathematical Physics</i> , 2009, 64, 139-168.	0.4	73
4	Nonlinear model dynamics for closed-system, constrained, maximal-entropy-generation relaxation by energy redistribution. <i>Physical Review E</i> , 2006, 73, 026113.	0.8	70
5	Quantum thermodynamics. A new equation of motion for a general quantum system. <i>Societa Italiana Di Fisica Nuovo Cimento B-General Physics, Relativity Astronomy and Mathematical Physics and Methods</i> , 1985, 87, 77-97.	0.2	69
6	Steepest entropy ascent model for far-nonequilibrium thermodynamics: Unified implementation of the maximum entropy production principle. <i>Physical Review E</i> , 2014, 90, 042113.	0.8	59
7	The Rate-Controlled Constrained-Equilibrium Approach to Far-From-Local-Equilibrium Thermodynamics. <i>Entropy</i> , 2012, 14, 92-130.	1.1	49
8	Boiling regimes in a closed two-phase thermosyphon. <i>International Journal of Heat and Mass Transfer</i> , 1990, 33, 2099-2110.	2.5	46
9	Dissolution of a Liquid Microdroplet in a Nonideal Liquid-Liquid Mixture Far from Thermodynamic Equilibrium. <i>Physical Review Letters</i> , 2009, 103, 064501.	2.9	44
10	Maximum entropy production rate in quantum thermodynamics. <i>Journal of Physics: Conference Series</i> , 2010, 237, 012004.	0.3	37
11	Quantum thermodynamics of nonequilibrium. Onsager reciprocity and dispersion-dissipation relations. <i>Foundations of Physics</i> , 1987, 17, 365-381.	0.6	35
12	Steepest-entropy-ascent quantum thermodynamic modeling of decoherence in two different microscopic composite systems. <i>Physical Review A</i> , 2015, 91, .	1.0	33
13	Quantum thermodynamic Carnot and Otto-like cycles for a two-level system. <i>Europhysics Letters</i> , 2012, 99, 20005.	0.7	30
14	Effects of quenching rate and viscosity on spinodal decomposition. <i>Physical Review E</i> , 2006, 74, 011507.	0.8	29
15	Essential equivalence of the general equation for the nonequilibrium reversible-irreversible coupling (GENERIC) and steepest-entropy-ascent models of dissipation for nonequilibrium thermodynamics. <i>Physical Review E</i> , 2015, 91, 042138.	0.8	29
16	Modeling Non-Equilibrium Dynamics of a Discrete Probability Distribution: General Rate Equation for Maximal Entropy Generation in a Maximum-Entropy Landscape with Time-Dependent Constraints. <i>Entropy</i> , 2008, 10, 160-182.	1.1	28
17	Evidence of convective heat transfer enhancement induced by spinodal decomposition. <i>Physical Review E</i> , 2007, 75, 066306.	0.8	26
18	Recent Progress in the Definition of Thermodynamic Entropy. <i>Entropy</i> , 2014, 16, 1547-1570.	1.1	26

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19	World energy consumption and resources: an outlook for the rest of the century. <i>International Journal of Environmental Technology and Management</i> , 2007, 7, 99.	0.1	25
20	A theorem on Lyapunov stability for dynamical systems and a conjecture on a property of entropy. <i>Journal of Mathematical Physics</i> , 1986, 27, 305-308.	0.5	24
21	Degree of Disequilibrium analysis for automatic selection of kinetic constraints in the Rate-Controlled Constrained-Equilibrium method. <i>Combustion and Flame</i> , 2016, 168, 342-364.	2.8	24
22	Flow and heat transfer in cavities between rotor and stator disks. <i>International Journal of Heat and Mass Transfer</i> , 2003, 46, 2715-2726.	2.5	21
23	NONLINEAR EXTENSIONS OF SCHRÖDINGER-VON NEUMANN QUANTUM DYNAMICS: A SET OF NECESSARY CONDITIONS FOR COMPATIBILITY WITH THERMODYNAMICS. <i>Modern Physics Letters A</i> , 2005, 20, 977-984.	0.5	20
24	The fourth law of thermodynamics: steepest entropy ascent. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2020, 378, 20190168.	1.6	20
25	Energy and Entropy Balances in a Combustion Chamber: Analytical Solution. <i>Combustion Science and Technology</i> , 1983, 30, 19-29.	1.2	19
26	Entropy and irreversibility for a single isolated two level system: New individual quantum states and new nonlinear equation of motion. <i>International Journal of Theoretical Physics</i> , 1985, 24, 119-134.	0.5	19
27	Influence of gaseous species transport on the response of solid state gas sensors within enclosures. <i>Sensors and Actuators B: Chemical</i> , 2001, 78, 144-150.	4.0	19
28	On the thermodynamic properties of thermal plasma in the flame kernel of hydrocarbon/air premixed gases. <i>European Physical Journal D</i> , 2016, 70, 1.	0.6	19
29	Multi-physics interactions drive VEGFR2 relocation on endothelial cells. <i>Scientific Reports</i> , 2017, 7, 16700.	1.6	19
30	On the relation between classical and quantum thermodynamic entropy. <i>Journal of Mathematical Physics</i> , 1984, 25, 1507-1510.	0.5	18
31	Novel approach for fair allocation of primary energy consumption among cogenerated energy-intensive products based on the actual local area production scenario. <i>Energy</i> , 2012, 44, 1107-1120.	4.5	18
32	Entropy Generation Rate in a Chemically Reacting System. <i>Journal of Energy Resources Technology, Transactions of the ASME</i> , 1993, 115, 208-212.	1.4	16
33	Thermodynamic derivations of conditions for chemical equilibrium and of Onsager reciprocal relations for chemical reactors. <i>Journal of Chemical Physics</i> , 2004, 121, 2718.	1.2	16
34	Allocating electricity production from a hybrid fossil-renewable power plant among its multi primary resources. <i>Energy</i> , 2013, 60, 344-360.	4.5	16
35	WELL-BEHAVED NONLINEAR EVOLUTION EQUATION FOR STEEPEST-ENTROPY-ASCENT DISSIPATIVE QUANTUM DYNAMICS. <i>International Journal of Quantum Information</i> , 2007, 05, 249-255.	0.6	15
36	Allocating resources and products in multi-hybrid multi-cogeneration: What fractions of heat and power are renewable in hybrid fossil-solar CHP?. <i>Energy</i> , 2014, 78, 587-603.	4.5	15

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37	Steepest-entropy-ascent nonequilibrium quantum thermodynamic framework to model chemical reaction rates at an atomistic level. <i>Physical Review E</i> , 2017, 95, 042139.	0.8	15
38	Effect of irreversible atomic relaxation on resonance fluorescence, absorption, and stimulated emission. <i>International Journal of Theoretical Physics</i> , 1985, 24, 1233-1258.	0.5	14
39	Heat transfer enhancement by spinodal decomposition in micro heat exchangers. <i>Experimental Thermal and Fluid Science</i> , 2012, 42, 38-45.	1.5	14
40	Dynamic Approach to Evaluate the Effect of Reducing District Heating Temperature on Indoor Thermal Comfort. <i>Energies</i> , 2021, 14, 25.	1.6	14
41	Steepest entropy ascent in Quantum Thermodynamics. <i>Lecture Notes in Physics</i> , 1987, , 441-443.	0.3	12
42	Minimal dissipation rate approach to correlate phase inversion data. <i>International Journal of Multiphase Flow</i> , 2008, 34, 684-689.	1.6	12
43	Heat transfer enhancement in a small pipe by spinodal decomposition of a low viscosity, liquid-liquid, strongly non-regular mixture. <i>International Journal of Heat and Mass Transfer</i> , 2012, 55, 897-906.	2.5	11
44	Exergy loss based allocation method for hybrid renewable-fossil power plants applied to an integrated solar combined cycle. <i>Energy</i> , 2019, 173, 893-901.	4.5	11
45	Solid Slider Bearings Lubricated by Their Own Melting or Sublimation. <i>Journal of Tribology</i> , 1987, 109, 296-300.	1.0	9
46	Where is the entropy challenge?. , 2008, , .		8
47	THE HATSOPOULOS-“GYFTOPOULOS RESOLUTION OF THE SCHRÖDINGER-PARK PARADOX ABOUT THE CONCEPT OF “STATE” IN QUANTUM STATISTICAL MECHANICS. <i>Modern Physics Letters A</i> , 2006, 21, 2799-2811.	0.5	7
48	Physics of nanoscale immiscible fluid displacement. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	7
49	General Thermodynamic Analysis for Engine Combustion Modeling. , 1985, , .		6
50	Systematic Constraint Selection Strategy for Rate-Controlled Constrained-Equilibrium Modeling of Complex Nonequilibrium Chemical Kinetics. <i>Journal of Non-Equilibrium Thermodynamics</i> , 2018, 43, 121-130.	2.4	6
51	What is a Simple System?*. <i>Journal of Energy Resources Technology, Transactions of the ASME</i> , 2015, 137, .	1.4	5
52	Electromagnetic Radiation: A Carrier of Energy and Entropy*. <i>Journal of Energy Resources Technology, Transactions of the ASME</i> , 2015, 137, .	1.4	5
53	Time-“Energy and Time-“Entropy Uncertainty Relations in Nonequilibrium Quantum Thermodynamics under Steepest-Entropy-Ascent Nonlinear Master Equations. <i>Entropy</i> , 2019, 21, 679.	1.1	5
54	What is Heat?. <i>Journal of Energy Resources Technology, Transactions of the ASME</i> , 2015, 137, .	1.4	4

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55	Validation of the ASVDADD Constraint Selection Algorithm for Effective RCCE Modeling of Natural Gas Ignition in Air. Journal of Energy Resources Technology, Transactions of the ASME, 2018, 140, .	1.4	4
56	Intrinsic Entropy and Intrinsic Irreversibility for a Single Isolated Constituent of Matter: Broader Kinematics and Generalized Nonlinear Dynamics. NATO ASI Series Series B: Physics, 1986, , 205-212.	0.2	4
57	Contact Geometry of Nonequilibrium Thermodynamics. , 2008, , .		3
58	Steepest-Entropy-Ascent Quantum Thermodynamic Non-Equilibrium Modeling of Decoherence of a Composite System of Two Interacting Spin- $\frac{1}{2}$ Systems. , 2013, , .		3
59	What is a Chemical Equilibrium State?*. Journal of Energy Resources Technology, Transactions of the ASME, 2015, 137, .	1.4	3
60	What is Diffusion?. Journal of Energy Resources Technology, Transactions of the ASME, 1994, 116, 136-139.	1.4	2
61	Fuel savings and reduction of greenhouse gases in a large waste-to-energy cogeneration facility. , 0, , .		2
62	What Fraction of the Electrical Energy Produced in a Hybrid Solar-Fossil Power Plant Should Qualify as "Renewable Electricity"? . , 2013, , .		2
63	A Novel Sequence of Exposition of Engineering Thermodynamics*. Journal of Energy Resources Technology, Transactions of the ASME, 2015, 137, .	1.4	2
64	What is the Second LAW?*. Journal of Energy Resources Technology, Transactions of the ASME, 2015, 137, .	1.4	2
65	Validation of the ASVDADD Constraint Selection Algorithm for Effective RCCE Modeling of Natural Gas Ignition in Air. , 2016, , .		2
66	Ergodicity, Maximum Entropy Production, and Steepest Entropy Ascent in the Proofs of Onsager's Reciprocal Relations. Journal of Non-Equilibrium Thermodynamics, 2018, 43, 101-110.	2.4	2
67	A General Nonlinear Evolution Equation for Irreversible Conservative Approach to Stable Equilibrium. NATO ASI Series Series B: Physics, 1986, , 193-204.	0.2	2
68	Nonlinear Dynamical Equation for Irreversible, Steepest-Entropy-Ascent Relaxation to Stable Equilibrium. AIP Conference Proceedings, 2007, , .	0.3	1
69	The Second Law from Locally Maximal Entropy Generation Quantum Dynamics. , 2008, , .		1
70	The Second Law and Statistical Mechanics. , 2008, , .		1
71	Rigorous Axiomatic Definition of Entropy Valid Also for Non-Equilibrium States. , 2008, , .		1
72	What is the Third Law?. Journal of Energy Resources Technology, Transactions of the ASME, 2015, 137, .	1.4	1

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73	Steepest Entropy Ascent Models of the Boltzmann Equation: Comparisons With Hard-Sphere Dynamics and Relaxation-Time Models for Homogeneous Relaxation From Highly Non-Equilibrium States. , 2013, , .		1
74	Discussion on "Frontiers of the Second Law", 2008, , .		0
75	Discussion on "Teaching the Second Law", 2008, , .		0
76	Discussion on "The Second Law and Energy", 2008, , .		0
77	Heat transfer enhancement by spinodal decomposition in micro heat exchangers. MATEC Web of Conferences, 2013, 3, 01075.	0.1	0
78	A Reformulation of Degree of Disequilibrium Analysis for Automatic Selection of Kinetic Constraints in the Rate-Controlled Constrained-Equilibrium Method. Journal of Energy Resources Technology, Transactions of the ASME, 2021, 143, .	1.4	0
79	What Fraction of the Fuel Consumed by a Heat-and-Power Cogeneration Facility Should Be Allocated to the Heat Produced? Old Problem, Novel Approach. , 2013, , .		0
80	Extending Degree of Disequilibrium Analysis for Automatic Selection of Kinetic Constraints in the Rate-Controlled Constrained-Equilibrium Method. , 2018, , .		0