Giovanni Mascali

List of Publications by Year
in descending order

50 papers	498 citations	567281 15 h-index	677142 22 g-index
53 all docs	53 docs citations	53 times ranked	92 citing authors

#	Article	IF	Citations
1	A hydrodynamic model for silicon semiconductors including crystal heating. European Journal of Applied Mathematics, 2015, 26, 477-496.	2.9	34
2	Charge Transport in Graphene including Thermal Effects. SIAM Journal on Applied Mathematics, 2017, 77, 593-613.	1.8	34
3	Exact Maximum Entropy Closure of the Hydrodynamical Model for Si Semiconductors: The 8-Moment Case. SIAM Journal on Applied Mathematics, 2009, 70, 710-734.	1.8	33
4	Numerical simulation of a double-gate MOSFET with a subband model for semiconductors based on the maximum entropy principle. Continuum Mechanics and Thermodynamics, 2012, 24, 417-436.	2.2	33
5	Hydrodynamical model of charge transport in GaAs based on the maximum entropy principle. Continuum Mechanics and Thermodynamics, 2002, 14, 405-423.	2.2	31
6	A non parabolic hydrodynamical subband model for semiconductors based on the maximum entropy principle. Mathematical and Computer Modelling, 2012, 55, 1003-1020.	2.0	30
7	Exploitation of the Maximum Entropy Principle in Mathematical Modeling of Charge Transport in Semiconductors. Entropy, 2017, 19, 36.	2.2	29
8	Monte Carlo Analysis of Thermal Effects in Monolayer Graphene. Journal of Computational and Theoretical Transport, 2016, 45, 540-553.	0.8	26
9	Simulation of a double-gate MOSFET by a non-parabolic energy-transport subband model for semiconductors based on the maximum entropy principle. Mathematical and Computer Modelling, 2013, 58, 321-343.	2.0	24
10	Si and GaAs mobility derived from a hydrodynamical model for semiconductors based on the maximum entropy principle. Physica A: Statistical Mechanics and Its Applications, 2005, 352, 459-476.	2.6	21
11	A hydrodynamical model for holes in silicon semiconductors: The case of non-parabolic warped bands. Mathematical and Computer Modelling, 2011, 53, 213-229.	2.0	19
12	A Hydrodynamic Model for Covalent Semiconductors with Applications to GaN and SiC. Acta Applicandae Mathematicae, 2012, 122, 335.	1.0	19
13	Charge transport and mobility in monolayer graphene. Journal of Mathematics in Industry, 2016, 7, .	1.2	19
14	Simulation of Gunn oscillations with a nonâ€parabolic hydrodynamical model based on the maximum entropy principle. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2005, 24, 35-54.	0.9	16
15	A New Formula for Thermal Conductivity Based on a Hierarchy of Hydrodynamical Models. Journal of Statistical Physics, 2016, 163, 1268-1284.	1.2	16
16	Charge Transport in Low Dimensional Semiconductor Structures. Mathematics in Industry, 2020, , .	0.3	16
17	A non-linear determination of the distribution function of degenerate gases with an application to semiconductors. Physica A: Statistical Mechanics and Its Applications, 2002, 310, 121-138.	2.6	14
18	A hierarchy of macroscopic models for phonon transport in graphene. Physica A: Statistical Mechanics and Its Applications, 2020, 548, 124489.	2.6	14

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19	Theoretical foundations for tail electron hydrodynamical models in semiconductors. Applied Mathematics Letters, 2001, 14, 245-252.	2.7	12
20	A hydrodynamical model for covalent semiconductors with a generalized energy dispersion relation. European Journal of Applied Mathematics, 2014, 25, 255-276.	2.9	10
21	Maximum entropy principle in relativistic radiation hydrodynamics II: Compton and double Compton scattering. Continuum Mechanics and Thermodynamics, 2002, 14, 549-561.	2.2	9
22	Thermal conductivity reduction by embedding nanoparticles. Journal of Computational Electronics, 2017, 16, 180-189.	2.5	8
23	A comprehensive hydrodynamical model for charge transport in graphene. , 2014, , .		4
24	Comparing Kinetic and MEP Model of Charge Transport in Graphene. Journal of Computational and Theoretical Transport, 2020, 49, 368-388.	0.8	4
25	Exploitation of the Maximum Entropy Principle in the Study of Thermal Conductivity of Silicon, Germanium and Graphene. Energies, 2022, 15, 4718.	3.1	4
26	About the Definition of the Local Equilibrium Lattice Temperature in Suspended Monolayer Graphene. Entropy, 2021, 23, 873.	2.2	3
27	Numerical simulation of a subband model based on the Maximum Entropy Principle. , 2010, , .		2
28	Some Mathematical Considerations on Solid State Physics in the Framework of the Phase Space Formulation of Quantum Mechanics. International Journal of Theoretical Physics, 2014, 53, 3546-3574.	1.2	2
29	Hyperbolic PDAEs for Semiconductor Devices Coupled with Circuits. Mathematics in Industry, 2010, , 305-312.	0.3	2
30	Quantum energy-transport and drift-diffusion models for electron transport in graphene: an approach by the wigner function. Journal of Computational Electronics, 2021, 20, 2135-2140.	2.5	2
31	High field fluid dynamical models for the transport of charge carriers in semiconductors. Physica A: Statistical Mechanics and Its Applications, 2001, 297, 291-302.	2.6	1
32	A hydrodynamical model for holes in silicon semiconductors. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2012, 31, 552-582.	0.9	1
33	An improved 2Dâ€“3D model for charge transport based on the maximum entropy principle. Continuum Mechanics and Thermodynamics, 2019, 31, 751-773.	2.2	1
34	Nonlinear Models for Silicon Semiconductors. Mathematics in Industry, 2010, , 429-436.	0.3	1
35	Two Dimensional MESFET Simulation of Transients and Steady State with Kinetic Based Hydrodynamical Models. VLSI Design, 2001, 13, 355-361.	0.5	0
36	NEW PERSPECTIVES ON MATHEMATICAL MODELING OF SEMICONDUCTORS. , 2005, , .		0

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37	Gunn Oscillations Described by the MEP Hydrodynamical Model of Semiconductors. Understanding Complex Systems, 2006, , 223-228.	0.6	0
38	A macroscopic model for electron transport in silicon using analytic descriptions for both the electron bands and the phonon dispersion relations. , 2013, , .		0
39	COMPTON COOLING OF A RADIATING FLUID. , 2002, , .		0
40	Non-parabolic Tail Electron Hydrodynamical Model for Silicon Semiconductors. Mathematics in Industry, 2004, , 94-103.	0.3	0
41	A TWO POPULATION MODEL FOR ELECTRON TRANSPORT IN SI. , 2004, , .		0
42	MOBILITY IN GAAS SEMICONDUCTORS. , 2004, , .		0
43	THE SEMICONDUCTOR STEADY BOLTZMANN EQUATION: A VARIATIONAL FORMULATION WITH AN APPLICATION TO MOBILITY. , 2007, , .		0
44	NONLINEAR EXACT CLOSURE FOR THE HYDRODYNAMICAL MODEL OF SEMICONDUCTORS BASED ON THE MAXIMUM ENTROPY PRINCIPLE. , 2007, , .		0
45	An Electro-Thermal Hydrodynamical Model for Charge Transport in Graphene. Mathematics in Industry, 2016, , 721-729.	0.3	0
46	Application of MEP to Charge Transport in Graphene. Mathematics in Industry, 2020, , 229-283.	0.3	0
47	Numerical Method and Simulations. Mathematics in Industry, 2020, , 211-227.	0.3	0
48	Mathematical Models for the Double-Gate MOSFET. Mathematics in Industry, 2020, , 191-210.	0.3	0
49	Charge and Phonon Transport in Suspended Monolayer Graphene. Mathematics in Industry, 2020, , 115-123.	0.3	0
50	Application of MEP to Silicon. Mathematics in Industry, 2020, , 69-129.	0.3	0