Juan Luis Vazquez

List of Publications by Year in descending order

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94433 118850 4,984 126 37 62 citations g-index h-index papers 130 130 130 1318 docs citations times ranked citing authors all docs

#	Article	IF	CITATIONS
1	The Hardy Inequality and the Asymptotic Behaviour of the Heat Equation with an Inverse-Square Potential. Journal of Functional Analysis, 2000, 173, 103-153.	1.4	292
2	A fractional porous medium equation. Advances in Mathematics, 2011, 226, 1378-1409.	1.1	161
3	Asymptotic behaviour for the porous medium equation posed in the whole space. Journal of Evolution Equations, 2003, 3, 67-118.	1.1	151
4	Nonlinear Porous Medium Flow with Fractional Potential Pressure. Archive for Rational Mechanics and Analysis, 2011, 202, 537-565.	2.4	149
5	Blow-up solutions of some nonlinear elliptic problems. Revista Matematica Complutense, 1997, 10, 443.	1.2	144
6	A General Fractional Porous Medium Equation. Communications on Pure and Applied Mathematics, 2012, 65, 1242-1284.	3.1	131
7	Theory of Extended Solutions¶for Fast-Diffusion Equations¶in Optimal Classes of Data.¶Radiation from Singularities. Archive for Rational Mechanics and Analysis, 2002, 164, 133-187.	2.4	116
8	Travelling waves and finite propagation in a reaction-diffusion equation. Journal of Differential Equations, 1991, 93, 19-61.	2.2	115
9	Existence, uniqueness and asymptotic behaviour for fractional porous medium equations on bounded domains. Discrete and Continuous Dynamical Systems, 2015, 35, 5725-5767.	0.9	114
10	Asymptotics of the Fast Diffusion Equation via Entropy Estimates. Archive for Rational Mechanics and Analysis, 2009, 191, 347-385.	2.4	97
11	Nonlinear Diffusion with Fractional Laplacian Operators. Abel Symposia, 2012, , 271-298.	0.3	95
12	Asymptotic Behaviour of Solutions of the Porous Medium Equation with Changing Sign. SIAM Journal on Mathematical Analysis, 1991, 22, 34-45.	1.9	93
13	Asymptotic behaviour and source-type solutions for a diffusion-convection equation. Archive for Rational Mechanics and Analysis, 1993, 124, 43-65.	2.4	92
14	The Hele–Shaw Asymptotics for Mechanical Models of Tumor Growth. Archive for Rational Mechanics and Analysis, 2014, 212, 93-127.	2.4	92
15	Asymptotic Behaviour and Propagation Properties of the One-Dimensional Flow of Gas in a Porous Medium. Transactions of the American Mathematical Society, 1983, 277, 507.	0.9	91
16	A well posed problem in singular Fickian diffusion. Archive for Rational Mechanics and Analysis, 1990, 110, 141-163.	2.4	79
17	Quantitative local and global a priori estimates for fractional nonlinear diffusion equations. Advances in Mathematics, 2014, 250, 242-284.	1.1	76
18	Mathematical model of the non equilibrium water oil displacement in porous strata. Applicable Analysis, 1997, 65, 19-45.	1.3	73

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19	Optimal existence and uniqueness theory for the fractional heat equation. Nonlinear Analysis: Theory, Methods & Applications, 2017, 153, 142-168.	1.1	70
20	On the propagation properties of a nonlinear degenerate parabolic equation. Communications in Partial Differential Equations, 1982, 7, 1381-1402.	2.2	65
21	The Dirichlet Problem for the Porous Medium Equation in Bounded Domains. Asymptotic Behavior. Monatshefte Fur Mathematik, 2004, 142, 81-111.	0.9	64
22	A Priori Estimates for Fractional Nonlinear Degenerate Diffusion Equations on Bounded Domains. Archive for Rational Mechanics and Analysis, 2015, 218, 317-362.	2.4	64
23	The diffusive limit for Carleman-type kinetic models. Nonlinearity, 2005, 18, 1223-1248.	1.4	62
24	Positivity, local smoothing, and Harnack inequalities for very fast diffusion equations. Advances in Mathematics, 2010, 223, 529-578.	1.1	56
25	The Mathematical Theories of Diffusion: Nonlinear and Fractional Diffusion. Lecture Notes in Mathematics, 2017, , 205-278.	0.2	54
26	Title is missing!. Indiana University Mathematics Journal, 1993, 42, 1413.	0.9	54
27	Geometrical properties of the solutions of one-dimensional nonlinear parabolic equations. Mathematische Annalen, 1995, 303, 741-769.	1.4	51
28	The Dirichlet problem for the fractional p-Laplacian evolution equation. Journal of Differential Equations, 2016, 260, 6038-6056.	2.2	51
29	Large Time Behavior for a Simplified 1D Model of Fluid–Solid Interactionâ€. Communications in Partial Differential Equations, 2003, 28, 1705-1738.	2.2	49
30	Global positivity estimates and Harnack inequalities for the fast diffusion equation. Journal of Functional Analysis, 2006, 240, 399-428.	1.4	47
31	Heat equation with dynamical boundary conditions of reactive–diffusive type. Journal of Differential Equations, 2011, 250, 2143-2161.	2.2	47
32	Isolated singularities of some semilinear elliptic equations. Journal of Differential Equations, 1985, 60, 301-321.	2.2	44
33	Viscosity solutions for quasilinear degenerate parabolic equations of porous medium type. Indiana University Mathematics Journal, 2005, 54, 817-860.	0.9	44
34	The Balance Between Strong Reaction And Slow Diffusion. Communications in Partial Differential Equations, 1990, 15, 159-183.	2.2	41
35	Regularity of solutions and interfaces of a generalized porous medium equation inR N. Annali Di Matematica Pura Ed Applicata, 1991, 158, 51-74.	1.0	40
36	Behaviour near extinction for the Fast Diffusion Equation on bounded domains. Journal Des Mathematiques Pures Et Appliquees, 2012, 97, 1-38.	1.6	40

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37	Fast diffusion flow on manifolds of nonpositive curvature. Journal of Evolution Equations, 2008, 8, 99-128.	1.1	38
38	Local smoothing effects, positivity, and Harnack inequalities for the fast p-Laplacian equation. Advances in Mathematics, 2010, 224, 2151-2215.	1.1	38
39	A mean field equation as limit of nonlinear diffusions with fractional Laplacian operators. Calculus of Variations and Partial Differential Equations, 2014, 49, 1091-1120.	1.7	37
40	Classical solutions and higher regularity for nonlinear fractional diffusion equations. Journal of the European Mathematical Society, 2017, 19, 1949-1975.	1.4	37
41	Heat Equation with Dynamical Boundary Conditions of Reactive Type. Communications in Partial Differential Equations, 2008, 33, 561-612.	2.2	36
42	Special Fast Diffusion with Slow Asymptotics: Entropy Method and Flow on a Riemannian Manifold. Archive for Rational Mechanics and Analysis, 2010, 196, 631-680.	2.4	36
43	Fundamental solution and long time behavior of the Porous Medium Equation in hyperbolic space. Journal Des Mathematiques Pures Et Appliquees, 2015, 104, 454-484.	1.6	35
44	LACK OF COLLISION IN A SIMPLIFIED 1D MODEL FOR FLUID–SOLID INTERACTION. Mathematical Models and Methods in Applied Sciences, 2006, 16, 637-678.	3.3	34
45	Sharp global estimates for local and nonlocal porous medium-type equations in bounded domains. Analysis and PDE, 2018, 11, 945-982.	1.4	34
46	Asymptotic behaviour of a generalized Burgers' equation. Journal Des Mathematiques Pures Et Appliquees, 1999, 78, 633-666.	1.6	32
47	Domain of existence and blowup for the exponential reaction-diffusion equation. Indiana University Mathematics Journal, 1999, 48, 0-0.	0.9	32
48	Symmetrization and Mass Comparison for Degenerate Nonlinear Parabolic and Related Elliptic Equations. Advanced Nonlinear Studies, 2005, 5, 87-131.	1.7	32
49	The Fisher-KPP Equation with Nonlinear Fractional Diffusion. SIAM Journal on Mathematical Analysis, 2014, 46, 3241-3276.	1.9	32
50	Monotone perturbations of the laplacian in L $1(R\ N\)$. Israel Journal of Mathematics, $1982,43,255\text{-}272.$	0.8	30
51	Singularities of elliptic equations with an exponential nonlinearity. Mathematische Annalen, 1984, 269, 119-135.	1.4	30
52	Extinction behaviour for fast diffusion equations with absorption. Nonlinear Analysis: Theory, Methods & Applications, 2001, 43, 943-985.	1.1	30
53	Failure of the Strong Maximum Principle in Nonlinear Diffusion. Existence of Needles. Communications in Partial Differential Equations, 2005, 30, 1263-1303.	2.2	30
54	Symmetrization for linear and nonlinear fractional parabolic equations of porous medium type. Journal Des Mathematiques Pures Et Appliquees, 2014, 101, 553-582.	1.6	30

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55	Fractional nonlinear degenerate diffusion equations on bounded domains part I. Existence, uniqueness and upper bounds. Nonlinear Analysis: Theory, Methods & Applications, 2016, 131, 363-398.	1.1	30
56	Long time behavior for the inhomogeneous PME in a medium with rapidly decaying density. Discrete and Continuous Dynamical Systems, 2010, 26, 521-549.	0.9	30
57	Finite and infinite speed of propagation for porous medium equations with nonlocal pressure. Journal of Differential Equations, 2016, 260, 1154-1199.	2.2	29
58	The Fisher-KPP problem with doubly nonlinear diffusion. Journal of Differential Equations, 2017, 263, 7647-7708.	2.2	28
59	The propagation of turbulent bursts. European Journal of Applied Mathematics, 1992, 3, 263-272.	2.9	27
60	Radial equivalence for the two basic nonlinear degenerate diffusion equations. Journal Des Mathematiques Pures Et Appliquees, 2008, 89, 1-24.	1.6	27
61	Classification of radial solutions to the Emden–Fowler equation on the hyperbolic space. Calculus of Variations and Partial Differential Equations, 2013, 46, 375-401.	1.7	27
62	Asymptotic behaviour for the porous medium equation posed in the whole space., 2003,, 67-118.		26
63	The porous medium equation on Riemannian manifolds with negative curvature. The large-time behaviour. Advances in Mathematics, 2017, 314, 328-377.	1.1	25
64	Characterisation of homogeneous fractional Sobolev spaces. Calculus of Variations and Partial Differential Equations, 2021, 60, 1.	1.7	25
65	Sharp boundary behaviour of solutions to semilinear nonlocal elliptic equations. Calculus of Variations and Partial Differential Equations, 2018, 57, 1.	1.7	24
66	Asymptotic behaviour of the doubly nonlinear diffusion equation on bounded domains. Nonlinear Analysis: Theory, Methods & Applications, 2013, 77, 1-32.	1.1	23
67	Optimal estimates for fractional fast diffusion equations. Journal Des Mathematiques Pures Et Appliquees, 2015, 103, 535-556.	1.6	23
68	Rate of Convergence to Barenblatt Profiles for the Fast Diffusion Equation. Archive for Rational Mechanics and Analysis, 2012, 204, 599-625.	2.4	21
69	Self-similar solutions of the second kind for the modified porous medium equation. European Journal of Applied Mathematics, 1994, 5, 391-403.	2.9	20
70	Finite and infinite speed of propagation for porous medium equations with fractional pressure. Comptes Rendus Mathematique, 2014, 352, 123-128.	0.3	20
71	The Fisher–KPP problem with doubly nonlinear "fast―diffusion. Nonlinear Analysis: Theory, Methods & Applications, 2017, 157, 212-248.	1.1	20
72	Non-uniqueness of solutions of nonlinear heat equations of fast diffusion type. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 1995, 12, 173-200.	1.4	19

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73	Thermal waves in absorbing media. Journal of Differential Equations, 1988, 74, 218-233.	2.2	17
74	Localized Non-diffusive Asymptotic Patterns for Nonlinear Parabolic Equations with Gradient Absorption. Journal of Dynamics and Differential Equations, 2007, 19, 985-1005.	1.9	17
75	On the Laplace equation with dynamical boundary conditions of reactive–diffusive type. Journal of Mathematical Analysis and Applications, 2009, 354, 674-688.	1.0	17
76	Transformations of self-similar solutions for porous medium equations of fractional type. Nonlinear Analysis: Theory, Methods & Applications, 2015, 119, 62-73.	1.1	17
77	The fractional p-Laplacian evolution equation in $f(R)$ in the sublinear case. Calculus of Variations and Partial Differential Equations, 2021, 60, 1.	1.7	16
78	Anisotropic ?-Laplacian Evolution of Fast Diffusion Type. Advanced Nonlinear Studies, 2021, 21, 523-555.	1.7	16
79	Heat Equation with Dynamical Boundary Conditions of Locally Reactive Type. Semigroup Forum, 2007, 74, 1-40.	0.6	15
80	Functional aspects of the Hardy inequality: appearance of a hidden energy. Journal of Evolution Equations, 2012, 12, 713-739.	1.1	15
81	Classical solutions for a logarithmic fractional diffusion equation. Journal Des Mathematiques Pures Et Appliquees, 2014, 101, 901-924.	1.6	15
82	Existence of Weak Solutions for a General Porous Medium Equation with Nonlocal Pressure. Archive for Rational Mechanics and Analysis, 2019, 233, 451-496.	2.4	15
83	Degenerate homogeneous parabolic equations associated with the infinity-Laplacian. Calculus of Variations and Partial Differential Equations, 2013, 46, 705-724.	1.7	13
84	Some free boundary problems involving non-local diffusion and aggregation. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140275.	3.4	13
85	Asymptotic behaviour for the fractional heat equation in the Euclidean space. Complex Variables and Elliptic Equations, 2018, 63, 1216-1231.	0.8	13
86	COMPLETE BLOW-UP AND THERMAL AVALANCHE FOR HEAT EQUATIONS WITH NONLINEAR BOUNDARY CONDITIONS. Communications in Partial Differential Equations, 2002, 27, 395-424.	2.2	12
87	Thermal avalanche for blowup solutions of semilinear heat equations. Communications on Pure and Applied Mathematics, 2004, 57, 59-98.	3.1	12
88	Highly time-oscillating solutions for very fast diffusion equations. Journal of Evolution Equations, 2011, 11, 725-742.	1.1	12
89	Multiple blow-up for a porous medium equation with reaction. Mathematische Annalen, 2011, 350, 801-827.	1.4	12
90	Symmetrization for fractional elliptic and parabolic equations and an isoperimetric application. Chinese Annals of Mathematics Series B, 2017, 38, 661-686.	0.4	12

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91	Flatness implies smoothness for solutions of the porous medium equation. Calculus of Variations and Partial Differential Equations, 2018, 57, 1.	1.7	12
92	Three Representations of the Fractional p-Laplacian: Semigroup, Extension and Balakrishnan Formulas. Fractional Calculus and Applied Analysis, 2021, 24, 966-1002.	2.2	12
93	The fractional SchrĶdinger equation with singular potential and measure data. Discrete and Continuous Dynamical Systems, 2019, 39, 7113-7139.	0.9	12
94	The one-phase fractional Stefan problem. Mathematical Models and Methods in Applied Sciences, 2021, 31, 83-131.	3.3	12
95	The Evolution of Singularities in Fast Diffusion Equations: Infinite-Time Blow-Down. SIAM Journal on Mathematical Analysis, 2011, 43, 1499-1535.	1.9	11
96	An overdetermined initial and boundary-value problem for a reaction-diffusion equation. Nonlinear Analysis: Theory, Methods & Applications, 1992, 19, 259-269.	1.1	10
97	Porous medium equation with nonlocal pressure in a bounded domain. Communications in Partial Differential Equations, 2018, 43, 1502-1539.	2.2	10
98	On a fractional thin film equation. Advances in Nonlinear Analysis, 2020, 9, 1516-1558.	2.6	10
99	Finite-time blow-down in the evolution of point masses by planar logarithmic diffusion. Discrete and Continuous Dynamical Systems, 2007, 19, 1-35.	0.9	10
100	WAVE EQUATION WITH SECOND-ORDER NON-STANDARD DYNAMICAL BOUNDARY CONDITIONS. Mathematical Models and Methods in Applied Sciences, 2008, 18, 2019-2054.	3.3	9
101	Measure-valued solutions and the phenomenon of blow-down in logarithmic diffusion. Journal of Mathematical Analysis and Applications, 2009, 352, 515-547.	1.0	9
102	The porous medium equation on Riemannian manifolds with negative curvature: the superquadratic case. Mathematische Annalen, 2019, 373, 119-153.	1.4	9
103	On the Two-phase Fractional Stefan Problem. Advanced Nonlinear Studies, 2020, 20, 437-458.	1.7	9
104	POROUS MEDIUM FLOW IN A TUBE: TRAVELING WAVES AND KPP BEHAVIOR. Communications in Contemporary Mathematics, 2007, 09, 731-751.	1.2	8
105	A Porous Medium Equation Involving the Infinity-Laplacian. Viscosity Solutions and Asymptotic Behavior. Communications in Partial Differential Equations, 2012, 37, 753-793.	2.2	8
106	Blow-up phenomena in nonlocal eigenvalue problems: When theories of L1 and L2 meet. Journal of Functional Analysis, 2021, 280, 108845.	1.4	8
107	Isolated Singularities of the Schrodinger Equation with a Good Potential. Transactions of the American Mathematical Society, 1989, 315, 711.	0.9	7
108	Multiple blowup for nonlinear heat equations at different places and different times. Indiana University Mathematics Journal, 2007, 56, 2859-2886.	0.9	7

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109	Asymptotic analysis of the p-Laplacian flow in an exterior domain. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2009, 26, 497-520.	1.4	7
110	Non-existence and instantaneous extinction of solutions for singular nonlinear fractional diffusion equations. Calculus of Variations and Partial Differential Equations, 2016, 55, 1.	1.7	7
111	Quantitative Local Bounds for Subcritical Semilinear Elliptic Equations. Milan Journal of Mathematics, 2012, 80, 65-118.	1.1	6
112	Behaviour of the velocity of one-dimensional flows in porous media. Transactions of the American Mathematical Society, 1984, 286, 787-802.	0.9	6
113	Schrödinger equations with unique positive isolated singularities. Manuscripta Mathematica, 1990, 67, 143-163.	0.6	5
114	Asymptotic convergence to dipole solutions in nonlinear parabolic equations. Proceedings of the Royal Society of Edinburgh Section A: Mathematics, 1995, 125, 877-900.	1.2	5
115	Maximal viscosity solutions of the modified porous medium equation and their asymptotic behaviour. European Journal of Applied Mathematics, 1996, 7, 453-471.	2.9	5
116	Nonlocal and Nonlinear Diffusions and Interactions: New Methods and Directions. Lecture Notes in Mathematics, $2017, \dots$	0.2	5
117	Growing solutions of the fractional p-Laplacian equation in the Fast Diffusion range. Nonlinear Analysis: Theory, Methods & Applications, 2022, 214, 112575.	1.1	5
118	The Nonlinearly Damped Oscillator. ESAIM - Control, Optimisation and Calculus of Variations, 2003, 9, 231-246.	1.3	4
119	The mesa problem for the fractional porous medium equation. Interfaces and Free Boundaries, 2015, 17, 263-288.	0.8	4
120	Existence of maximal solutions for some very singular nonlinear fractional diffusion equations in 1D. Journal of Evolution Equations, 2016, 16, 723-758.	1.1	4
121	Porous Medium Equation with Nonlocal Pressure. Springer Optimization and Its Applications, 2018, , 277-308.	0.9	4
122	Travelling wave behaviour arising in nonlinear diffusion problems posed in tubular domains. Journal of Differential Equations, 2020, 269, 2664-2696.	2.2	4
123	Reverse Smoothing Effects, Fine Asymptotics, and Harnack Inequalities for Fast Diffusion Equations. Boundary Value Problems, 2007, 2007, 1-31.	0.7	3
124	Infinite-time concentration in aggregation–diffusion equations with a given potential. Journal Des Mathematiques Pures Et Appliquees, 2022, 157, 346-398.	1.6	3
125	Maximal Solutions of Singular Diffusion Equations with General Initial Data. , 1992, , 471-484.		2
126	The Dirichlet Problem for the Porous Medium Equation in Bounded Domains. Asymptotic Behavior. , 2004, , 81-111.		1