

Steve Shkoller

List of Publications by Year in descending order

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53
papers

2,755
citations

186265
28
h-index

175258
52
g-index

53
all docs

53
docs citations

53
times ranked

850
citing authors

#	ARTICLE	IF	CITATIONS
1	Multisymplectic Geometry, Variational Integrators, and Nonlinear PDEs. Communications in Mathematical Physics, 1998, 199, 351-395.	2.2	439
2	Well-posedness of the free-surface incompressible Euler equations with or without surface tension. Journal of the American Mathematical Society, 2007, 20, 829-931.	3.9	244
3	Motion of an Elastic Solid inside an Incompressible Viscous Fluid. Archive for Rational Mechanics and Analysis, 2005, 176, 25-102.	2.4	146
4	The Interaction between Quasilinear Elastodynamics and the Navier-Stokes Equations. Archive for Rational Mechanics and Analysis, 2006, 179, 303-352.	2.4	131
5	Discrete Euler-Poincaré and Lie-Poisson equations. Nonlinearity, 1999, 12, 1647-1662.	1.4	122
6	Well-Posedness in Smooth Function Spaces for the Moving-Boundary Three-Dimensional Compressible Euler Equations in Physical Vacuum. Archive for Rational Mechanics and Analysis, 2012, 206, 515-616.	2.4	119
7	Geometry and Curvature of Diffeomorphism Groups with H^1 Metric and Mean Hydrodynamics. Journal of Functional Analysis, 1998, 160, 337-365.	1.4	118
8	Variational methods, multisymplectic geometry and continuum mechanics. Journal of Geometry and Physics, 2001, 38, 253-284.	1.4	107
9	Numerical simulations of the Lagrangian averaged Navier-Stokes equations for homogeneous isotropic turbulence. Physics of Fluids, 2003, 15, 524-544.	4.0	101
10	Well-posedness in smooth function spaces for moving boundary 3D compressible Euler equations in physical vacuum. Communications on Pure and Applied Mathematics, 2011, 64, 328-366.	3.1	88
11	Multisymplectic geometry, covariant Hamiltonians, and water waves. Mathematical Proceedings of the Cambridge Philosophical Society, 1999, 125, 553-575.	0.4	86
12	The Anisotropic Lagrangian Averaged Euler and Navier-Stokes Equations. Archive for Rational Mechanics and Analysis, 2003, 166, 27-46.	2.4	77
13	A Priori Estimates for the Free-Boundary 3D Compressible Euler Equations in Physical Vacuum. Communications in Mathematical Physics, 2010, 296, 559-587.	2.2	69
14	On the Finite-Time Splash and Splat Singularities for the 3-D Free-Surface Euler Equations. Communications in Mathematical Physics, 2014, 325, 143-183.	2.2	68
15	Well-posedness of the Muskat problem with $\gamma > 0$. Advances in Mathematics, 2016, 286, 32-104.	1.1	57
16	Navier-Stokes Equations Interacting with a Nonlinear Elastic Biofluid Shell. SIAM Journal on Mathematical Analysis, 2007, 39, 742-800.	1.9	54
17	Nonuniqueness of Weak Solutions to the SQG Equation. Communications on Pure and Applied Mathematics, 2019, 72, 1809-1874.	3.1	50
18	The Interaction of the 3D Navier-Stokes Equations with a Moving Nonlinear Koiter Elastic Shell. SIAM Journal on Mathematical Analysis, 2010, 42, 1094-1155.	1.9	49

#	ARTICLE	IF	CITATIONS
19	Well-Posedness of the Free-Boundary Compressible 3-D Euler Equations with Surface Tension and the Zero Surface Tension Limit. <i>SIAM Journal on Mathematical Analysis</i> , 2013, 45, 3690-3767.	1.9	44
20	Reduction in principal fiber bundles: Covariant Euler-Poincaré equations. <i>Proceedings of the American Mathematical Society</i> , 1999, 128, 2155-2164.	0.8	41
21	Symmetry reduction of discrete Lagrangian mechanics on Lie groups. <i>Journal of Geometry and Physics</i> , 2000, 36, 140-151.	1.4	39
22	THE VORTEX BLOB METHOD AS A SECOND-GRADE NON-NEWTONIAN FLUID. <i>Communications in Partial Differential Equations</i> , 2001, 26, 295-314.	2.2	39
23	Well-posedness of the full Ericksen-Leslie model of nematic liquid crystals. <i>Comptes Rendus Mathematique</i> , 2001, 333, 919-924.	0.5	39
24	A simple proof of well-posedness for the free-surface incompressible Euler equations. <i>Discrete and Continuous Dynamical Systems - Series S</i> , 2010, 3, 429-449.	1.1	39
25	Analysis on Groups of Diffeomorphisms of Manifolds with Boundary and the Averaged Motion of a Fluid. <i>Journal of Differential Geometry</i> , 2000, 55, 145.	1.1	38
26	On the motion of vortex sheets with surface tension in three-dimensional Euler equations with vorticity. <i>Communications on Pure and Applied Mathematics</i> , 2008, 61, 1715-1752.	3.1	37
27	A variational approach to second-order multisymplectic field theory. <i>Journal of Geometry and Physics</i> , 2000, 35, 333-366.	1.4	35
28	WELL-POSEDNESS AND GLOBAL ATTRACTORS FOR LIQUID CRYSTALS ON RIEMANNIAN MANIFOLDS. <i>Communications in Partial Differential Equations</i> , 2002, 27, 1103-1137.	2.2	33
29	Solvability and Regularity for an Elliptic System Prescribing the Curl, Divergence, and Partial Trace of a Vector Field on Sobolev-Class Domains. <i>Journal of Mathematical Fluid Mechanics</i> , 2017, 19, 375-422.	1.0	21
30	Rigorous Asymptotic Models of Water Waves. <i>Water Waves</i> , 2019, 1, 71-130.	1.0	20
31	Enhancement of the inverse-cascade of energy in the two-dimensional Lagrangian-averaged Navier-Stokes equations. <i>Physics of Fluids</i> , 2001, 13, 1528-1531.	4.0	19
32	On the Impossibility of Finite-Time Splash Singularities for Vortex Sheets. <i>Archive for Rational Mechanics and Analysis</i> , 2016, 221, 987-1033.	2.4	19
33	Formation of Shocks for 2D Isentropic Compressible Euler. <i>Communications on Pure and Applied Mathematics</i> , 2022, 75, 2069-2120.	3.1	17
34	A Model for Rayleigh-Taylor Mixing and Interface Turnover. <i>Multiscale Modeling and Simulation</i> , 2017, 15, 274-308.	1.6	15
35	A space-time smooth artificial viscosity method with wavelet noise indicator and shock collision scheme, Part 2: The 2-D case. <i>Journal of Computational Physics</i> , 2019, 387, 45-80.	3.8	14
36	Global Existence of Near-Affine Solutions to the Compressible Euler Equations. <i>Archive for Rational Mechanics and Analysis</i> , 2019, 234, 115-180.	2.4	13

#	ARTICLE	IF	CITATIONS
37	A space-time smooth artificial viscosity method with wavelet noise indicator and shock collision scheme, Part 1: The 1-D case. <i>Journal of Computational Physics</i> , 2019, 387, 81-116.	3.8	13
38	Well-posedness and decay to equilibrium for the Muskat problem with discontinuous permeability. <i>Transactions of the American Mathematical Society</i> , 2019, 372, 2255-2286.	0.9	11
39	A priori estimates for solutions to the relativistic Euler equations with a moving vacuum boundary. <i>Communications in Partial Differential Equations</i> , 2019, 44, 859-906.	2.2	10
40	Global Stability and Decay for the Classical Stefan Problem. <i>Communications on Pure and Applied Mathematics</i> , 2015, 68, 689-757.	3.1	9
41	A multiscale model for Rayleigh-Taylor and Richtmyer-Meshkov instabilities. <i>Journal of Computational Physics</i> , 2020, 405, 109177.	3.8	8
42	Persistence of Invariant Manifolds for Nonlinear PDEs. <i>Studies in Applied Mathematics</i> , 1999, 102, 27-67.	2.4	7
43	On the Limit as the Density Ratio Tends to Zero for Two Perfect Incompressible Fluids Separated by a Surface of Discontinuity. <i>Communications in Partial Differential Equations</i> , 2010, 35, 817-845.	2.2	7
44	Global existence and decay for solutions of the Hele-Shaw flow with injection. <i>Interfaces and Free Boundaries</i> , 2014, 16, 297-338.	0.8	7
45	On the splash singularity for the free-surface of a Navier-Stokes fluid. <i>Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire</i> , 2019, 36, 475-503.	1.4	7
46	Well-posedness for the Classical Stefan Problem and the Zero Surface Tension Limit. <i>Archive for Rational Mechanics and Analysis</i> , 2017, 223, 213-264.	2.4	6
47	Turbulent channel flow in weighted Sobolev spaces using the anisotropic Lagrangian averaged Navier-Stokes (LANS- α) equations. <i>Communications on Pure and Applied Analysis</i> , 2004, 3, 1-23.	0.8	5
48	Formation of Point Shocks for 3D Compressible Euler. <i>Communications on Pure and Applied Mathematics</i> , 2023, 76, 2073-2191.	3.1	5
49	Local Well-Posedness and Global Stability of the Two-Phase Stefan Problem. <i>SIAM Journal on Mathematical Analysis</i> , 2017, 49, 4942-5006.	1.9	4
50	Shock Formation and Vorticity Creation for 3d Euler. <i>Communications on Pure and Applied Mathematics</i> , 2023, 76, 1965-2072.	3.1	4
51	Global stability of steady states in the classical Stefan problem for general boundary shapes. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2015, 373, 20140284.	3.4	3
52	Affine Motion of 2d Incompressible Fluids Surrounded by Vacuum and Flows in $\mathbb{S}^2 \times \mathbb{R}$. <i>Communications in Mathematical Physics</i> , 2020, 375, 1003-1040.	2.2	2
53	A SIMPLE PROOF OF A PRIORI ESTIMATES FOR WATER-WAVES. , 2010, , .		0