Timothy N Phillips

List of Publications by Year
in descending order

131	2,353	257450	302126
papers	citations	24 h-index	39 g-index

133	133	133	1374
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Lattice Boltzmann model for simulating immiscible two-phase flows. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 4033-4053.	2.1	189
2	Spectral Galerkin methods for the primary two-point boundary value problem in modelling viscoelastic flows. International Journal for Numerical Methods in Engineering, 1988, 26, 647-662.	2.8	95
3	Viscoelastic flow through a planar contraction using a semi-Lagrangian finite volume method. Journal of Non-Newtonian Fluid Mechanics, 1999, 87, 215-246.	2.4	78
4	Modified lattice Boltzmann model for axisymmetric flows. Physical Review E, 2007, 75, 056703.	2.1	71
5	Spectral collocation methods for the primary two-point boundary value problem in modelling viscoelastic flows. International Journal for Numerical Methods in Engineering, 1988, 26, 805-813.	2.8	63
6	Contraction/expansion flows: The pressure drop and related issues. Journal of Non-Newtonian Fluid Mechanics, 2006, 137, 31-38.	2.4	51
7	On the effects of a piezoviscous lubricant on the dynamics of a journal bearing. Journal of Rheology, 1996, 40, 1239-1266.	2.6	48
8	Numerical validation of a consistent axisymmetric lattice Boltzmann model. Physical Review E, 2008, 77, 026703.	2.1	48
9	Comparison of creeping and inertial flow of an Oldroyd B fluid through planar and axisymmetric contractions. Journal of Non-Newtonian Fluid Mechanics, 2002, 108, 25-47.	2.4	47
10	The effect of viscoelasticity on a rising gas bubble. Journal of Non-Newtonian Fluid Mechanics, 2010, 165, 852-865.	2.4	45
11	The Treatment of Spurious Pressure Modes in Spectral Incompressible Flow Calculations. Journal of Computational Physics, 1993, 105, 150-164.	3.8	39
12	A dynamic nonlinear regression method for the determination of the discrete relaxation spectrum. Journal Physics D: Applied Physics, 2000, 33, 1219-1229.	2.8	38
13	On the Legendre Coefficients of a General-Order Derivative of an Infinitely Differentiable Function. IMA Journal of Numerical Analysis, 1988, 8, 455-459.	2.9	37
14	Natural convection in an enclosed cavity. Journal of Computational Physics, 1984, 54, 365-381.	3.8	36
15	The influence of viscoelasticity on the collapse of cavitation bubbles near a rigid boundary. Theoretical and Computational Fluid Dynamics, 2012, 26, 245-277.	2.2	36
16	On the Mathematical Modelling of a Compressible Viscoelastic Fluid. Archive for Rational Mechanics and Analysis, 2012, 205, 1-26.	2.4	35
17	Lattice Boltzmann models for non-Newtonian flows. IMA Journal of Applied Mathematics, 2011, 76, 790-816.	1.6	34
18	Viscoelastic flow around a confined cylinder using spectral/hp element methods. Journal of Non-Newtonian Fluid Mechanics, 2013, 200, 131-146.	2.4	33

#	Article	IF	Citations
19	Compatible Spectral Approximations for the Velocity-Pressure-Stress Formulation of the Stokes Problem. SIAM Journal of Scientific Computing, 1999, 20, 1530-1550.	2.8	32
20	On the Coefficients of Integrated Expansions of Ultraspherical Polynomials. SIAM Journal on Numerical Analysis, 1990, 27, 823-830.	2.3	30
21	Numerical prediction of extrudate swell of branched polymer melts. Rheologica Acta, 2010, 49, 657-676.	2.4	28
22	The effect of viscoelasticity on the dynamics of gas bubbles near free surfaces. Physics of Fluids, 2013, 25, .	4.0	28
23	A Moving Spectral Element Approach to the Dynamically Loaded Journal Bearing Problem. Journal of Computational Physics, 1996, 123, 476-494.	3.8	27
24	Discontinuous spectral element approximations for the velocity-pressure-stress formulation of the Stokes problem. International Journal for Numerical Methods in Engineering, 1998, 43, 1401-1419.	2.8	27
25	On the influence of lubricant properties on the dynamics of two-dimensional journal bearings. Journal of Non-Newtonian Fluid Mechanics, 2000, 93, 29-59.	2.4	25
26	Modelling pom-pom type models with high-order finite volume schemes. Journal of Non-Newtonian Fluid Mechanics, 2005, 126, 207-220.	2.4	25
27	Spherical bubble collapse in viscoelastic fluids. Journal of Non-Newtonian Fluid Mechanics, 2010, 165, 56-64.	2.4	25
28	A consistent reflected image particle approach to the treatment of boundary conditions in smoothed particle hydrodynamics. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 3400-3410.	6.6	24
29	The Langevin and Fokkerâ€“Planck Equations in Polymer Rheology. Handbook of Numerical Analysis, 2011, 16, 211-303.	1.8	23
30	Chebyshev spectral collocation methods for laminar flow through a channel contraction. Journal of Computational Physics, 1989, 84, 114-133.	3.8	21
31	STEADY VISCOELASTIC FLOW PAST A SPHERE USING SPECTRAL ELEMENTS. International Journal for Numerical Methods in Engineering, 1996, 39, 1517-1534.	2.8	21
32	Viscoelastic flow in an undulating tube using spectral methods. Computers and Fluids, 2004, 33, 1075-1095.	2.5	21
33	The numerical prediction of planar viscoelastic contraction flows using the pomâ€“pom model and higher-order finite volume schemes. Journal of Computational Physics, 2007, 220, 586-611.	3.8	20
34	Spectral collocation methods for stokes flow in contraction geometries and unbounded domains. Journal of Computational Physics, 1989, 80, 314-330.	3.8	19
35	Conforming Chebyshev Spectral Collocation Methods for the Solution of Laminar flow in a Constricted Channel. IMA Journal of Numerical Analysis, 1991, 11, 33-54.	2.9	19
36	On the simulation of viscoelastic flow past a sphere using spectral methods. Journal of Non-Newtonian Fluid Mechanics, 1992, 44, 281-306.	2.4	18

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37	Spectral Element Methods for Axisymmetric Stokes Problems. Journal of Computational Physics, 2000, 164, 81-103.	3.8	18
38	Conservative semi-Lagrangian finite volume schemes. Numerical Methods for Partial Differential Equations, 2001, 17, 403-425.	3.6	18
39	On the solution of the Fokkerâ€“Planck equation using a high-order reduced basis approximation. Computer Methods in Applied Mechanics and Engineering, 2009, 199, 158-168.	6.6	18
40	Singular Matched Eigenfunction Expansions for Stokes Flow around a Corner. IMA Journal of Applied Mathematics, 1989, 42, 13-26.	1.6	17
41	Efficient Direct Methods for Solving the Spectral Collocation Equations for Stokes Flow in Rectangularly Decomposable Domains. SIAM Journal on Scientific and Statistical Computing, 1989, 10, 89-103.	1.5	17
42	Spectral element methods for transient viscoelastic flow problems. Journal of Computational Physics, 2004, 201, 286-314.	3.8	17
43	A spectral element approach to the simulation of viscoelastic flows using Brownian configuration fields. Journal of Non-Newtonian Fluid Mechanics, 2006, 138, 98-110.	2.4	17
44	Bubble collapse in compressible fluids using a spectral element marker particle method. Part 2. Viscoelastic fluids. International Journal for Numerical Methods in Fluids, 2013, 71, 1103-1130.	1.6	17
45	Preconditioners for the Spectral Multigrid Method. IMA Journal of Numerical Analysis, 1986, 6, 273-292.	2.9	16
46	On semi-infinite spectral elements for Poisson problems with re-entrant boundary singularities. Journal of Computational and Applied Mathematics, 1988, 21, 173-188.	2.0	16
47	Pseudospectral collocation methods for fourth-order differential equations. IMA Journal of Numerical Analysis, 1995, 15, 523-553.	2.9	16
48	Spectral element predictions of die-swell for Oldroyd-B fluids. Computers and Fluids, 2011, 43, 107-118.	2.5	16
49	High-order finite volume methods for viscoelastic flow problems. Journal of Computational Physics, 2004, 199, 16-40.	3.8	15
50	Numerical simulation of flow past a cylinder using models of XPP type. Journal of Non-Newtonian Fluid Mechanics, 2009, 156, 7-20.	2.4	15
51	A spectral domain decomposition method for the planar non-Newtonian stick-slip problem. Journal of Non-Newtonian Fluid Mechanics, 1991, 41, 43-79.	2.4	14
52	Influence matrix technique for the numerical spectral simulation of viscous incompressible flows. Numerical Methods for Partial Differential Equations, 1991, 7, 9-24.	3.6	14
53	Preconditioned Iterative Methods for Unsteady Non-Newtonian Flow Between Eccentrically Rotating Cylinders. SIAM Journal of Scientific Computing, 1996, 17, 1369-1394.	2.8	14
54	Unphysical phenomena associated with the extended pom-pom model in steady flow. Journal of Non-Newtonian Fluid Mechanics, 2007, 145, 92-101.	2.4	14

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55	On the characteristics and compatibility equations for the UCM model fluid. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2008, 88, 523-539.	1.6	14
56	High-order approximation of Pearson diffusion processes. Journal of Computational and Applied Mathematics, 2012, 236, 2853-2868.	2.0	14
57	Three-dimensional spectral approximations to Stokes flow between eccentrically rotating cylinders. International Journal for Numerical Methods in Fluids, 1991, 13, 217-233.	1.6	13
58	Preconditioned iterative methods for elliptic problems on decomposed domains. International Journal of Computer Mathematics, 1992, 44, 5-18.	1.8	13
59	On the coefficients of differentiated expansions of ultraspherical polynomials. Applied Numerical Mathematics, 1992, 9, 133-141.	2.1	13
60	Pseudospectral method for transient viscoelastic flow in an axisymmetric channel. Numerical Methods for Partial Differential Equations, 1993, 9, 691-710.	3.6	13
61	The influence of Oldroyd-B and PTT lubricants on moving journal bearing systems. Journal of Non-Newtonian Fluid Mechanics, 2008, 150, 196-210.	2.4	13
62	Mixed finite element methods for groundwater flow in heterogeneous aquifers. Computers and Fluids, 2013, 88, 60-80.	2.5	13
63	On the derivation of macroscopic models for compressible viscoelastic fluids using the generalized bracket framework. Journal of Non-Newtonian Fluid Mechanics, 2019, 266, 59-71.	2.4	13
64	Efficient and stable spectral element methods for predicting the flow of an XPP fluid past a cylinder. Journal of Non-Newtonian Fluid Mechanics, 2005, 129, 143-162.	2.4	12
65	Three-dimensional effects in dynamically loaded journal bearings. International Journal for Numerical Methods in Fluids, 1999, 29, 311-341.	1.6	11
66	A transient thermal analysis for dynamically loaded bearings. Computers and Fluids, 2000, 29, 749-790.	2.5	11
67	A Semi-Lagrangian Finite Volume Method for Newtonian Contraction Flows. SIAM Journal of Scientific Computing, 2001, 22, 2152-2177.	2.8	10
68	Numerical simulation of steady planar die swell for a Newtonian fluid using the spectral element method. Computers and Fluids, 2010, 39, 780-792.	2.5	10
69	The Effect of Viscoelasticity on the Performance of Dynamically Loaded Journal Bearings. , 0, , .		9
70	On the use of characteristic variables in viscoelastic flow problems. IMA Journal of Applied Mathematics, 2001, 66, 127-147.	1.6	9
71	The prediction of complex flows of polymer melts using spectral elements. Journal of Non-Newtonian Fluid Mechanics, 2004, 122, 287-301.	2.4	9
72	Residual a posteriori error estimator for a three-field model of a non-linear generalized Stokes problem. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 2599-2610.	6.6	9

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73	On the potential of spectral methods to solve problems in non-Newtonian fluid mechanics. Numerical Methods for Partial Differential Equations, 1989, 5, 35-43.	3.6	7
74	On efficient direct methods for conforming spectral domain decomposition techniques. Journal of Computational and Applied Mathematics, 1990, 33, 141-155.	2.0	7
75	On the effects of a compressible viscous lubricant on the load-bearing capacity of a journal bearing. International Journal for Numerical Methods in Fluids, 2007, 55, 1091-1120.	1.6	7
76	Viscoelastic flow past confined objects using a microâ€“macro approach. Rheologica Acta, 2009, 48, 373-395.	2.4	7
77	A non-singular boundary element method for modelling bubble dynamics in viscoelastic fluids. Journal of Non-Newtonian Fluid Mechanics, 2016, 235, 109-124.	2.4	7
78	A spectral element formulation of the immersed boundary method for Newtonian fluids. Computer Methods in Applied Mechanics and Engineering, 2016, 298, 29-57.	6.6	7
79	A high resolution spectral element approximation of viscoelastic flows in axisymmetric geometries using a DEVSS-G/DG formulation. Journal of Non-Newtonian Fluid Mechanics, 2017, 240, 15-33.	2.4	7
80	Mass- and momentum-conserving spectral methods for Stokes flow. Journal of Computational and Applied Mathematics, 1994, 53, 185-206.	2.0	6
81	Viscometric flow interpretation using qualitative and quantitative techniques. Engineering Applications of Artificial Intelligence, 1999, 12, 255-272.	8.1	6
82	Some issues regarding spectral element meshes for moving journal bearing systems. International Journal for Numerical Methods in Fluids, 2005, 48, 423-454.	1.6	6
83	The numerical prediction of droplet deformation and breakâ€up using the Godunov markerâ€particle projection scheme. International Journal for Numerical Methods in Fluids, 2008, 56, 1155-1160.	1.6	6
84	Bubble collapse in compressible fluids using a spectral element marker particle method. Part 1. Newtonian fluids. International Journal for Numerical Methods in Fluids, 2012, 70, 1167-1187.	1.6	6
85	A conforming spectral collocation strategy for Stokes flow through a channel contraction. Applied Numerical Mathematics, 1991, 7, 329-345.	2.1	5
86	Compatible pseudospectral approximations for incompressible flow in an undulating tube. Journal of Rheology, 1993, 37, 1181-1199.	2.6	5
87	Multidomain Collocation Methods for the Stream Function Formulation of the Navierâ€“Stokes Equations. SIAM Journal of Scientific Computing, 1995, 16, 773-797.	2.8	5
88	Flow past a cylinder using a semi-Lagrangian spectral element method. Applied Numerical Mathematics, 2000, 33, 251-257.	2.1	5
89	Alternative approach to the solution of the dispersion relation for a generalized lattice Boltzmann equation. Physical Review E, 2008, 77, 026702.	2.1	5
90	Spectral/hp element methods for plane Newtonian extrudate swell. Computers and Fluids, 2015, 116, 105-117.	2.5	5

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91	Numerical approximation of high-dimensional Fokkerâ€“Planck equations with polynomial coefficients. Journal of Computational and Applied Mathematics, 2015, 273, 296-312.	2.0	5
92	A Finite Difference Scheme for the Equilibrium Equations of Elastic Bodies. SIAM Journal on Scientific and Statistical Computing, 1986, 7, 288-300.	1.5	4
93	Relaxation schemes for spectral multigrid methods. Journal of Computational and Applied Mathematics, 1987, 18, 149-162.	2.0	4
94	The spectral simulation of axisymmetric non-Newtonian flows using time splitting techniques. Finite Elements in Analysis and Design, 1994, 16, 229-236.	3.2	4
95	On the enforcement of the zero mean pressure condition in the spectral element approximation of the Stokes problem. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 1027-1049.	6.6	4
96	The choice of spectral element basis functions in domains with an axis of symmetry. Journal of Computational and Applied Mathematics, 2007, 201, 217-229.	2.0	4
97	An anisothermal, compressible, piezoviscous model for journalâ€bearing lubrication. International Journal for Numerical Methods in Fluids, 2008, 58, 27-55.	1.6	4
98	The effect of viscoelasticity on the dynamics of two gas bubbles near a rigid boundary. IMA Journal of Applied Mathematics, 2012, 77, 652-677.	1.6	4
99	Efficient stochastic FEM for flow in heterogeneous porous media. Part 1: random Gaussian conductivity coefficients. International Journal for Numerical Methods in Fluids, 2014, 74, 359-385.	1.6	4
100	The Effect of Lubricant Rheology on the Performance of Dynamically Loaded Journal Bearings. , 0, , .		3
101	A mass conserving multi-domain spectral collocation method for the Stokes problem. Computers and Fluids, 1997, 26, 825-840.	2.5	3
102	Numerical approximation of the spectra of Phan-Thien Tanner liquids. Numerical Algorithms, 2005, 38, 133-153.	1.9	3
103	A modified deformation field method for integral constitutive models. Journal of Non-Newtonian Fluid Mechanics, 2009, 163, 78-87.	2.4	3
104	Generic polyhedron grid generation for solving partial differential equations on spherical surfaces. Computers and Geosciences, 2012, 39, 11-17.	4.2	3
105	Least-Squares Proper Generalized Decompositions for Weakly Coercive Elliptic Problems. SIAM Journal of Scientific Computing, 2017, 39, A1366-A1388.	2.8	3
106	Linear stability of the flow of a second order fluid past a wedge. Physics of Fluids, 2020, 32, .	4.0	3
107	A finite difference scheme for a class of first-order elliptic partial differential equations. Computers and Mathematics With Applications, 1985, 11, 411-417.	2.7	2
108	An Embedding Method for the Cauchyâ€”Riemann Equations. IMA Journal of Numerical Analysis, 1985, 5, 429-436.	2.9	2

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109	Spectral domain decomposition techniques for viscous incompressible flows. Computer Methods in Applied Mechanics and Engineering, 1990, 80, 389-395.	6.6	2
110	Title is missing!. Journal of Scientific Computing, 2002, 17, 201-210.	2.3	2
111	Numerical Approximation of the Spectra of Phan-Thien Tanner Liquids. Numerical Algorithms, 2005, 38, 133-153.	1.9	2
112	A physical decomposition of the stress tensor for complex flows. Rheologica Acta, 2008, 47, 719-725.	2.4	2
113	Compressible and nonisothermal viscoelastic flow between eccentrically rotating cylinders. Theoretical and Computational Fluid Dynamics, 2021, 35, 731-756.	2.2	2
114	Numerical solution of a coupled pair of elliptic equations from solid state electronics. Journal of Computational Physics, 1984, 53, 472-483.	3.8	1
115	A modified least squares formulation for a system of first-order equations. Applied Numerical Mathematics, 1985, 1, 339-347.	2.1	1
116	On the numerical treatment of boundary singularities in elliptic problems. Journal of Computational Physics, 1986, 64, 459-472.	3.8	1
117	The smoothing properties of the alternating direction implicit method in multigrid iterations. Applied Numerical Mathematics, 1987, 3, 513-522.	2.1	1
118	On methods of incomplete LU decompositions for solving Poisson's equation in annular regions. Applied Numerical Mathematics, 1991, 8, 515-531.	2.1	1
119	Well-conditioned spectral discretizations of the biharmonic operator. International Journal of Computer Mathematics, 1993, 48, 179-189.	1.8	1
120	Compatible approximation spaces for the velocityâ€“pressureâ€“stress formulation for creeping flows. Applied Numerical Mathematics, 2000, 33, 225-231.	2.1	1
121	Preface to the XIIIth International Workshop Special Issue of the Journal of non-Newtonian Fluid Mechanics. Journal of Non-Newtonian Fluid Mechanics, 2004, 122, 1-2.	2.4	1
122	Property preserving reformulation of constitutive laws for the conformation tensor. Theoretical and Computational Fluid Dynamics, 2018, 32, 789-803.	2.2	1
123	B. Fornberg A practical guide to pseudospectral methods (Cambridge University Press, Cambridge,) Tj ETQq1 1 0.784314 rgBT /Overlo Mathematical Society, 1999, 42, 209-211.	0.3	0
124	Reply to â€œComment on â€˜Alternative approach to the solution of the dispersion relation for a generalized lattice Boltzmann equationâ€™â€‰â€• Physical Review E, 2008, 78, .	2.1	0
125	5th Annual European Rheology Conference (AERC 2009), Cardiff, Wales, United Kingdom, 15â€“17 April 2009. Rheologica Acta, 2010, 49, 541-542.	2.4	0
126	Towards global SEM mantle convection simulations on polyhedral-based grids. Journal of Computational and Applied Mathematics, 2019, 348, 48-57.	2.0	0

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127	Efficient stochastic finite element methods for flow in heterogeneous porous media. Part 2: Random lognormal permeability. International Journal for Numerical Methods in Fluids, 2020, 92, 1626-1652.	1.6	0
128	The Effect of Lubricant Rheology in Dynamically Loaded Journal Bearings. , 1998, , 363-364.		0
129	The Effect of Viscoelasticity on the Performance of Journal Bearings. , 2006, , 175-186.		0
130	Efficient spectral algorithms for solving the incompressible Navier-stokes equations in unbounded rectangularly decomposable domains. , 1989, , 484-488.		0
131	Conforming Chebyshev spectral collocation methods for the solution of the incompressible Navier-Stokes equations in complex geometries. , 1990, , 179-180.		0