Nicholas K-R Kevlahan

List of Publications by Year
in descending order

44 papers	1,447 citations	430874 18 h-index	315739 38 g-index
53 all docs	53 docs citations	53 times ranked	866 citing authors

#	Article	IF	Citations
1	Non-Gaussianity and coherent vortex simulation for two-dimensional turbulence using an adaptive orthogonal wavelet basis. Physics of Fluids, 1999, 11, 2187-2201.	4.0	301
2	An adaptive multilevel wavelet collocation method for elliptic problems. Journal of Computational Physics, 2005, 206, 412-431.	3.8	118
3	Computation of turbulent flow past an array of cylinders using a spectral method with Brinkman penalization. European Journal of Mechanics, B/Fluids, 2001, 20, 333-350.	2.5	113
4	An Adaptive Wavelet Collocation Method for Fluid-Structure Interaction at High Reynolds Numbers. SIAM Journal of Scientific Computing, 2005, 26, 1894-1915.	2.8	97
5	Vorticity filaments in two-dimensional turbulence: creation, stability and effect. Journal of Fluid Mechanics, 1997, 346, 49-76.	3.4	90
6	Simultaneous spaceâ€“time adaptive wavelet solution of nonlinear parabolic differential equations. Journal of Computational Physics, 2006, 214, 829-857.	3.8	75
7	The vorticity jump across a shock in a non-uniform flow. Journal of Fluid Mechanics, 1997, 341, 371-384.	3.4	72
8	Hybrid wavelet collocation-Brinkman penalization method for complex geometry flows. International Journal for Numerical Methods in Fluids, 2002, 40, 531-538.	1.6	58
9	An adaptive wavelet collocation method for the solution of partial differential equations on the sphere. Journal of Computational Physics, 2008, 227, 5610-5632.	3.8	56
10	WKB theory for rapid distortion of inhomogeneous turbulence. Journal of Fluid Mechanics, 1999, 390, 325-348.	3.4	39
11	SHOCK-GENERATED VORTICITY IN THE INTERSTELLAR MEDIUM AND THE ORIGIN OF THE STELLAR INITIAL MASS FUNCTION. Astrophysical Journal, 2009, 702, 39-49.	4.5	35
12	Scaling of spaceâ€“time modes with Reynolds number in two-dimensional turbulence. Journal of Fluid Mechanics, 2007, 570, 217-226.	3.4	31
13	Shock interactions, turbulence and the origin of the stellar mass spectrum. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120248.	3.4	28
14	CVS and SCALES simulation of 3-D isotropic turbulence. Journal of Turbulence, 2005, 6, N37.	1.4	26
15	The propagation of weak shocks in non-uniform flows. Journal of Fluid Mechanics, 1996, 327, 161-197.	3.4	25
16	Controlling the dual cascade of two-dimensional turbulence. Journal of Fluid Mechanics, 2011, 668, 202-222.	3.4	24
17	Lagrangian dynamic SGS model for stochastic coherent adaptive large eddy simulation. Journal of Turbulence, 2008, 9, N11.	1.4	23
18	A comparison of different analytical techniques for identifying structures in turbulence. Flow, Turbulence and Combustion, 1994, 53, 339-355.	0.2	20

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19	Suppression of three-dimensional flow instabilities in tube bundles. Journal of Fluids and Structures, 2005, 20, 611-620.	3.4	19
20	The role of vortex wake dynamics in the flow-induced vibration of tube arrays. Journal of Fluids and Structures, 2011, 27, 829-837.	3.4	18
21	A dynamic subfilter-scale model for plane parallel flows. Physics of Fluids, 2001, 13, 2045-2064.	4.0	17
22	A conservative adaptive wavelet method for the shallowâ€water equations on the sphere. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 1712-1726.	2.7	17
23	A conservative adaptive wavelet method for the shallowâ€water equations on staggered grids. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 1997-2020.	2.7	15
24	An Adaptive Multilevel Wavelet Solver for Elliptic Equations on an Optimal Spherical Geodesic Grid. SIAM Journal of Scientific Computing, 2008, 30, 3073-3086.	2.8	13
25	Multifractal signatures of infectious diseases. Journal of the Royal Society Interface, 2012, 9, 2167-2180.	3.4	13
26	Adaptive wavelet simulation of global ocean dynamics using a new Brinkman volume penalization. Geoscientific Model Development, 2015, 8, 3891-3909.	3.6	12
27	Three-dimensional Floquet stability analysis of the wake in cylinder arrays. Journal of Fluid Mechanics, 2007, 592, 79-88.	3.4	11
28	Low shear diffusion central schemes for particle methods. Journal of Computational Physics, 2020, 414, 109454.	3.8	10
29	Stochastic differential equation models of vortex merging and reconnection. Physics of Fluids, 2005, 17, 065107.	4.0	9
30	A Multiresolution Model for the Simulation of Transient Heat and Mass Transfer. Numerical Heat Transfer, Part B: Fundamentals, 2012, 61, 147-170.	0.9	9
31	The role of Reynolds number in the fluid-elastic instability of tube arrays. Journal of Fluids and Structures, 2017, 73, 16-36.	3.4	9
32	Multidimensional turbulence spectra â€“ identifying properties of turbulent structures. Journal of Physics: Conference Series, 2011, 318, 042022.	0.4	8
33	WAVETRISK-1.0: an adaptive wavelet hydrostatic dynamical core. Geoscientific Model Development, 2019, 12, 4901-4921.	3.6	8
34	Brinkman volume penalization for bathymetry in three-dimensional ocean models. Ocean Modelling, 2020, 145, 101530.	2.4	6
35	On the convergence of data assimilation for the one-dimensional shallow water equations with sparse observations. Advances in Computational Mathematics, 2019, 45, 3195-3216.	1.6	5
36	A Three-Dimensional Adaptive Wavelet Method for Fluid-Structure Interaction. ERCOFTAC Series, 2004, , 147-154.	0.1	5

#	Article	IF	Citations
37	Adaptive Wavelet Methods for Earth Systems Modelling. Fluids, 2021, 6, 236.	1.7	3
38	Variational assimilation of surface wave data for bathymetry reconstruction. Part I: algorithm and test cases. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 73, 1976907.	1.7	3
39	Multilevel approximation of the gradient operator on an adaptive spherical geodesic grid. Advances in Computational Mathematics, 2015, 41, 663-689.	1.6	2
40	Geometric, Stochastic and Algebraic Vortices. , 2005, , 99-118.		2
41	Compressive Sampling for Energy Spectrum Estimation of Turbulent Flows. SIAM Journal of Scientific Computing, 2015, 37, B452-B472.	2.8	1
42	Vortices for computing: the engines of turbulence simulation. Theoretical and Computational Fluid Dynamics, 2010, 24, 241-245.	2.2	0
43	Vortices for computing: the engines of turbulence simulation. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2009, , 257-261.	0.2	0
44	Variational Assimilation of Surface Wave Data for Bathymetry Reconstruction. Part II: Second Order Adjoint Sensitivity Analysis. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 74, 187-203.	1.7	0