Karthik Duraisamy

List of Publications by Year
in descending order

55 papers	3,449 citations	257450 24 h-index	223800 46 g-index
55 all docs	55 docs citations	55 times ranked	1912 citing authors

#	Article	IF	Citations
1	Model reduction for multi-scale transport problems using model-form preserving least-squares projections with variable transformation. Journal of Computational Physics, 2022, 448, 110742.	3.8	19
2	Entropy-stable schemes in the low-Mach-number regime: Flux-preconditioning, entropy breakdowns, and entropy transfers. Journal of Computational Physics, 2022, 456, 111036.	3.8	0
3	Large-eddy simulation and challenges for projection-based reduced-order modeling of a gas turbine model combustor. International Journal of Spray and Combustion Dynamics, 2022, 14, 153-175.	1.0	6
4	Non-intrusive balancing transformation of highly stiff systems with lightly damped impulse response. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, .	3.4	2
5	Subgrid-scale characterization and asymptotic behavior of multidimensional upwind schemes for the vorticity transport equations. Physical Review Fluids, 2021, 6, .	2.5	3
6	Sparsity-promoting algorithms for the discovery of informative Koopman-invariant subspaces. Journal of Fluid Mechanics, 2021, 917, .	3.4	27
7	Perspectives on machine learning-augmented Reynolds-averaged and large eddy simulation models of turbulence. Physical Review Fluids, 2021, 6, .	2.5	122
8	Generalizable physics-constrained modeling using learning and inference assisted by feature-space engineering. Physical Review Fluids, 2021, 6, .	2.5	11
9	Modal Analysis of Fluid Flows: Applications and Outlook. AIAA Journal, 2020, 58, 998-1022.	2.6	301
10	Multi-level convolutional autoencoder networks for parametric prediction of spatio-temporal dynamics. Computer Methods in Applied Mechanics and Engineering, 2020, 372, 113379.	6.6	92
11	On the structure of time-delay embedding in linear models of non-linear dynamical systems. Chaos, 2020, 30, 073135.	2.5	33
12	Variational multiscale closures for finite element discretizations using the Mori–Zwanzig approach. Computer Methods in Applied Mechanics and Engineering, 2020, 368, 113152.	6.6	5
13	Physics-Informed Probabilistic Learning of Linear Embeddings of Nonlinear Dynamics with Guaranteed Stability. SIAM Journal on Applied Dynamical Systems, 2020, 19, 480-509.	1.6	75
14	An adaptive mesh refinement approach based on optimal sparse sensing. Theoretical and Computational Fluid Dynamics, 2020, 34, 457-482.	2.2	6
15	Formulation of Entropy-Stable schemes for the multicomponent compressible Euler equations. Computer Methods in Applied Mechanics and Engineering, 2020, 363, 112912.	6.6	15
16	Reduced-Order Modeling Framework for Combustor Instabilities Using Truncated Domain Training. AIAA Journal, 2020, 58, 618-632.	2.6	14
17	The Adjoint Petrov–Galerkin method for non-linear model reduction. Computer Methods in Applied Mechanics and Engineering, 2020, 365, 112991.	6.6	30
18	Quad-Rotor Flight Simulation in Realistic Atmospheric Conditions. AIAA Journal, 2020, 58, 1992-2004.	2.6	35

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19	Electrochemical Modeling of PEM Fuel Cells. ECS Meeting Abstracts, 2020, MA2020-02, 2096-2096.	0.0	0
20	Prediction of aerodynamic flow fields using convolutional neural networks. Computational Mechanics, 2019, 64, 525-545.	4.0	270
21	Investigations and Improvement of Robustness of Reduced-Order Models of Reacting Flow. AIAA Journal, 2019, 57, 5377-5389.	2.6	22
22	Estimating uncertainty in homogeneous turbulence evolution due to coarse-graining. Physics of Fluids, 2019, 31, 025106.	4.0	17
23	Turbulence Modeling in the Age of Data. Annual Review of Fluid Mechanics, 2019, 51, 357-377.	25.0	755
24	Towards Integrated Field Inversion and Machine Learning With Embedded Neural Networks for RANS Modeling. , 2019, , .		24
25	Investigations and Improvement of Robustness of Reduced-Order Models of Reacting Flow. , 2019, , .		11
26	Entropy Conservative Schemes and the Receding Flow Problem. Journal of Scientific Computing, 2019, 78, 971-994.	2.3	8
27	Multi-dimensional finite volume scheme for the vorticity transport equations. Computers and Fluids, 2018, 167, 17-32.	2.5	10
28	Aerodynamic Design of Aircraft Engine Nozzles with Consideration of Model Form Uncertainties. , 2018, , .		0
29	Multiple-Fidelity Modeling of Interactional Aerodynamics. Journal of Aircraft, 2018, 55, 1839-1854.	2.4	7
30	Retrospective Cost Adaptive Control of Unstart in a Model Scramjet Combustor. AIAA Journal, 2018, 56, 1085-1096.	2.6	12
31	Long-Time Predictive Modeling of Nonlinear Dynamical Systems Using Neural Networks. Complexity, 2018, 2018, 1-26.	1.6	48
32	Data-Driven Discovery of Closure Models. SIAM Journal on Applied Dynamical Systems, 2018, 17, 2381-2413.	1.6	74
33	An investigation of an implicit large-eddy simulation framework for the vorticity transport equations. , 2018, , .		6
34	Challenges in Reduced Order Modeling of Reacting Flows. , 2018, , .		21
35	Machine-Learning-Augmented Predictive Modeling of Turbulent Separated Flows over Airfoils. AIAA Journal, 2017, 55, 2215-2227.	2.6	277
36	*A priori* estimation of memory effects in reduced-order models of nonlinear systems using the Mori–Zwanzig formalism. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170385.	2.1	32

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37	A dynamic subgrid scale model for Large Eddy Simulations based on the Mori–Zwanzig formalism. Journal of Computational Physics, 2017, 349, 154-175.	3.8	38
38	Aerodynamic optimization of shrouded wind turbines. Wind Energy, 2017, 20, 877-889.	4.2	29
39	Non-Markovian closure models for large eddy simulations using the Mori-Zwanzig formalism. Physical Review Fluids, 2017, 2, .	2.5	35
40	A segregated explicit algebraic structure-based model for wall-bounded turbulent flows. International Journal of Heat and Fluid Flow, 2016, 61, 284-297.	2.4	1
41	Using field inversion to quantify functional errors in turbulence closures. Physics of Fluids, 2016, 28, .	4.0	133
42	Generalized Riemann problem-based upwind scheme for the vorticity transport equations. Computers and Fluids, 2016, 132, 10-18.	2.5	9
43	A paradigm for data-driven predictive modeling using field inversion and machine learning. Journal of Computational Physics, 2016, 305, 758-774.	3.8	378
44	Computational analysis of vertical axis wind turbine arrays. Theoretical and Computational Fluid Dynamics, 2016, 30, 387-401.	2.2	33
45	Large-Eddy Simulation of a Wing–Body Junction Flow. AIAA Journal, 2016, 54, 793-804.	2.6	19
46	Retrospective cost adaptive thrust control of a 1D scramjet with Mach number disturbance. , 2015, , .		11
47	Adjoint-based estimation and control of spatial, temporal and stochastic approximation errors in unsteady flow simulations. Computers and Fluids, 2015, 121, 180-191.	2.5	4
48	Computational analysis of shrouded wind turbine configurations using a 3-dimensional RANS solver. Renewable Energy, 2015, 75, 818-832.	8.9	79
49	Large-Eddy Simulations of a Normal Shock Train in a Constant-Area Isolator. AIAA Journal, 2014, 52, 539-558.	2.6	93
50	Flow physics and RANS modelling of oblique shock/turbulent boundary layer interaction. Journal of Fluid Mechanics, 2013, 729, 231-284.	3.4	102
51	Assessment of Transition Model and CFD Methodology for Wind Turbine Flows. , 2012, , .		27
52	Robust Grid Adaptation for Efficient Uncertainty Quantification. AIAA Journal, 2012, 50, 1538-1546.	2.6	13
53	Goal-oriented uncertainty propagation using stochastic adjoints. Computers and Fluids, 2012, 66, 10-20.	2.5	9
54	Risk Assessment of Scramjet Unstart Using Adjoint-Based Sampling Methods. AIAA Journal, 2012, 50, 581-592.	2.6	31

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55	Evolution of isolated turbulent trailing vortices. Physics of Fluids, 2008, 20, .	4.0	15