Karthik Duraisamy

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/4080808/publications.pdf

Version: 2024-02-01

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	Turbulence Modeling in the Age of Data. Annual Review of Fluid Mechanics, 2019, 51, 357-377.	25.0	755
2	A paradigm for data-driven predictive modeling using field inversion and machine learning. Journal of Computational Physics, 2016, 305, 758-774.	3.8	378
3	Modal Analysis of Fluid Flows: Applications and Outlook. AIAA Journal, 2020, 58, 998-1022.	2.6	301
4	Machine-Learning-Augmented Predictive Modeling of Turbulent Separated Flows over Airfoils. AIAA Journal, 2017, 55, 2215-2227.	2.6	277
5	Prediction of aerodynamic flow fields using convolutional neural networks. Computational Mechanics, 2019, 64, 525-545.	4.0	270
6	Using field inversion to quantify functional errors in turbulence closures. Physics of Fluids, 2016, 28, .	4.0	133
7	Perspectives on machine learning-augmented Reynolds-averaged and large eddy simulation models of turbulence. Physical Review Fluids, 2021, 6, .	2.5	122
8	Flow physics and RANS modelling of oblique shock/turbulent boundary layer interaction. Journal of Fluid Mechanics, 2013, 729, 231-284.	3.4	102
9	Large-Eddy Simulations of a Normal Shock Train in a Constant-Area Isolator. AIAA Journal, 2014, 52, 539-558.	2.6	93
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	Computational analysis of shrouded wind turbine configurations using a 3-dimensional RANS solver. Renewable Energy, 2015, 75, 818-832.	8.9	79
12	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
13	Data-Driven Discovery of Closure Models. SIAM Journal on Applied Dynamical Systems, 2018, 17, 2381-2413.	1.6	74
14	Long-Time Predictive Modeling of Nonlinear Dynamical Systems Using Neural Networks. Complexity, 2018, 2018, 1-26.	1.6	48
15	A dynamic subgrid scale model for Large Eddy Simulations based on the Moriâ€“Zwanzig formalism. Journal of Computational Physics, 2017, 349, 154-175.	3.8	38
16	Quad-Rotor Flight Simulation in Realistic Atmospheric Conditions. AIAA Journal, 2020, 58, 1992-2004.	2.6	35
17	Non-Markovian closure models for large eddy simulations using the Mori-Zwanzig formalism. Physical Review Fluids, 2017, 2, .	2.5	35
18	Computational analysis of vertical axis wind turbine arrays. Theoretical and Computational Fluid Dynamics, 2016, 30, 387-401.	2.2	33

#	Article	IF	Citations
19	On the structure of time-delay embedding in linear models of non-linear dynamical systems. Chaos, 2020, 30, 073135.	2.5	33
20	A priori estimation of memory effects in reduced-order models of nonlinear systems using the Moriâ€“Zwanzig formalism. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170385.	2.1	32
21	Risk Assessment of Scramjet Unstart Using Adjoint-Based Sampling Methods. AIAA Journal, 2012, 50, 581-592.	2.6	31
22	The Adjoint Petrovâ€“Galerkin method for non-linear model reduction. Computer Methods in Applied Mechanics and Engineering, 2020, 365, 112991.	6.6	30
23	Aerodynamic optimization of shrouded wind turbines. Wind Energy, 2017, 20, 877-889.	4.2	29
24	Assessment of Transition Model and CFD Methodology for Wind Turbine Flows. , 2012, , .		27
25	Sparsity-promoting algorithms for the discovery of informative Koopman-invariant subspaces. Journal of Fluid Mechanics, 2021, 917, .	3.4	27
26	Towards Integrated Field Inversion and Machine Learning With Embedded Neural Networks for RANS Modeling. , 2019, , .		24
27	Investigations and Improvement of Robustness of Reduced-Order Models of Reacting Flow. AIAA Journal, 2019, 57, 5377-5389.	2.6	22
28	Challenges in Reduced Order Modeling of Reacting Flows. , 2018, , .		21
29	Large-Eddy Simulation of a Wingâ€“Body Junction Flow. AIAA Journal, 2016, 54, 793-804.	2.6	19
30	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
31	Estimating uncertainty in homogeneous turbulence evolution due to coarse-graining. Physics of Fluids, 2019, 31, 025106.	4.0	17
32	Evolution of isolated turbulent trailing vortices. Physics of Fluids, 2008, 20, .	4.0	15
33	Formulation of Entropy-Stable schemes for the multicomponent compressible Euler equations. Computer Methods in Applied Mechanics and Engineering, 2020, 363, 112912.	6.6	15
34	Reduced-Order Modeling Framework for Combustor Instabilities Using Truncated Domain Training. AIAA Journal, 2020, 58, 618-632.	2.6	14
35	Robust Grid Adaptation for Efficient Uncertainty Quantification. AIAA Journal, 2012, 50, 1538-1546.	2.6	13
36	Retrospective Cost Adaptive Control of Unstart in a Model Scramjet Combustor. AIAA Journal, 2018, 56, 1085-1096.	2.6	12

#	Article	IF	Citations
37	Retrospective cost adaptive thrust control of a 1D scramjet with Mach number disturbance. , 2015, , .		11
38	Investigations and Improvement of Robustness of Reduced-Order Models of Reacting Flow. , 2019, , .		11
39	Generalizable physics-constrained modeling using learning and inference assisted by feature-space engineering. Physical Review Fluids, 2021, 6, .	2.5	11
40	Multi-dimensional finite volume scheme for the vorticity transport equations. Computers and Fluids, 2018, 167, 17-32.	2.5	10
41	Goal-oriented uncertainty propagation using stochastic adjoints. Computers and Fluids, 2012, 66, 10-20.	2.5	9
42	Generalized Riemann problem-based upwind scheme for the vorticity transport equations. Computers and Fluids, 2016, 132, 10-18.	2.5	9
43	Entropy Conservative Schemes and the Receding Flow Problem. Journal of Scientific Computing, 2019, 78, 971-994.	2.3	8
44	Multiple-Fidelity Modeling of Interactional Aerodynamics. Journal of Aircraft, 2018, 55, 1839-1854.	2.4	7
45	An investigation of an implicit large-eddy simulation framework for the vorticity transport equations. , 2018, , .		6
46	An adaptive mesh refinement approach based on optimal sparse sensing. Theoretical and Computational Fluid Dynamics, 2020, 34, 457-482.	2.2	6
47	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
48	Variational multiscale closures for finite element discretizations using the Moriâ€“Zwanzig approach. Computer Methods in Applied Mechanics and Engineering, 2020, 368, 113152.	6.6	5
49	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
50	Subgrid-scale characterization and asymptotic behavior of multidimensional upwind schemes for the vorticity transport equations. Physical Review Fluids, 2021, 6, .	2.5	3
51	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
52	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
53	Aerodynamic Design of Aircraft Engine Nozzles with Consideration of Model Form Uncertainties. , 2018, , .		0
54	Electrochemical Modeling of PEM Fuel Cells. ECS Meeting Abstracts, 2020, MA2020-02, 2096-2096.	0.0	0

#	Article	IF	Citations
55	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