Ramanan Sankaran

List of Publications by Year
in descending order

58 papers	3,049 citations	279798 23 h-index	265206 42 g-index
62 all docs	62 docs citations	62 times ranked	1369 citing authors

#	Article	IF	Citations
1	Terascale direct numerical simulations of turbulent combustion using S3D. Computational Science & Discovery, 2009, 2, 015001.	1.5	462
2	Structure of a spatially developing turbulent lean methaneâ€“air Bunsen flame. Proceedings of the Combustion Institute, 2007, 31, 1291-1298.	3.9	329
3	Three-dimensional direct numerical simulation of a turbulent lifted hydrogen jet flame in heated coflow: flame stabilization and structure. Journal of Fluid Mechanics, 2009, 640, 453-481.	3.4	197
4	Scalar mixing in direct numerical simulations of temporally evolving plane jet flames with skeletal CO/H2 kinetics. Proceedings of the Combustion Institute, 2007, 31, 1633-1640.	3.9	192
5	Direct numerical simulation of ignition front propagation in a constant volume with temperature inhomogeneities. Combustion and Flame, 2006, 145, 128-144.	5.2	189
6	Turbulent flameâ€“wall interaction: a direct numerical simulation study. Journal of Fluid Mechanics, 2010, 658, 5-32.	3.4	181
7	The effects of non-uniform temperature distribution on the ignition of a lean homogeneous hydrogenâ€“air mixture. Proceedings of the Combustion Institute, 2005, 30, 875-882.	3.9	157
8	A DNS study on the stabilization mechanism of a turbulent lifted ethylene jet flame in highly-heated coflow. Proceedings of the Combustion Institute, 2011, 33, 1619-1627.	3.9	140
9	Direct numerical simulation of ignition front propagation in a constant volume with temperature inhomogeneities. Combustion and Flame, 2006, 145, 145-159.	5.2	115
10	Direct numerical simulation of turbulent combustion: fundamental insights towards predictive models. Journal of Physics: Conference Series, 2005, 16, 65-79.	0.4	88
11	Numerical investigation of spontaneous flame propagation under RCCI conditions. Combustion and Flame, 2015, 162, 3412-3426.	5.2	75
12	Response of flame thickness and propagation speed under intense turbulence in spatially developing lean premixed methaneâ€“air jet flames. Combustion and Flame, 2015, 162, 3294-3306.	5.2	72
13	EFFECTS OF HYDROGEN ADDITION ON THE MARKSTEIN LENGTH AND FLAMMABILITY LIMIT OF STRETCHED METHANE/AIR PREMIXED FLAMES. Combustion Science and Technology, 2006, 178, 1585-1611.	2.3	71
14	Dynamic flammability limits of methane/air premixed flames with mixture composition fluctuations. Proceedings of the Combustion Institute, 2002, 29, 77-84.	3.9	69
15	On the effect of injection timing on the ignition of lean PRF/air/EGR mixtures under direct dual fuel stratification conditions. Combustion and Flame, 2017, 183, 309-321.	5.2	56
16	Direct numerical simulations of reacting flows with detailed chemistry using many-core/GPU acceleration. Computers and Fluids, 2018, 173, 73-79.	2.5	52
17	Cray XT4. , 2007, , .		46
18	Direct numerical simulations of turbulent lean premixed combustion. Journal of Physics: Conference Series, 2006, 46, 38-42.	0.4	44

#	Article	IF	Citations
19	Early evaluation of IBM BlueGene/P. , 2008, , .		44
20	Estimates of the three-dimensional flame surface density and every term in its transport equation from two-dimensional measurements. Proceedings of the Combustion Institute, 2011, 33, 1447-1454.	3.9	40
21	Determination of three-dimensional quantities related to scalar dissipation rate and its transport from two-dimensional measurements: Direct Numerical Simulation based validation. Proceedings of the Combustion Institute, 2013, 34, 1151-1162.	3.9	36
22	An analysis of lower-dimensional approximations to the scalar dissipation rate using direct numerical simulations of plane jet flames. Proceedings of the Combustion Institute, 2009, 32, 1455-1463.	3.9	33
23	Numerical analysis of reactionâ€“diffusion effects on species mixing rates in turbulent premixed methaneâ€“air combustion. Combustion and Flame, 2010, 157, 506-515.	5.2	30
24	Hybridizing S3D into an Exascale application using OpenACC: An approach for moving to multi-petaflops and beyond. , 2012, , .		27
25	Direct numerical simulations of turbulent reacting flows with shock waves and stiff chemistry using many-core/GPU acceleration. Computers and Fluids, 2021, 215, 104787.	2.5	27
26	Accelerated application development: The ORNL Titan experience. Computers and Electrical Engineering, 2015, 46, 123-138.	4.8	26
27	A statistical analysis of developing knock intensity in a mixture with temperature inhomogeneities. Proceedings of the Combustion Institute, 2021, 38, 5781-5789.	3.9	26
28	Characteristics of auto-ignition in a stratified iso-octane mixture with exhaust gases under homogeneous charge compression ignition conditions. Combustion Theory and Modelling, 2005, 9, 417-432.	1.9	23
29	Effects of Turbulence and Temperature Fluctuations on Knock Development in an Ethanol/Air Mixture. Flow, Turbulence and Combustion, 2021, 106, 575-595.	2.6	21
30	Using MPI file caching to improve parallel write performance for large-scale scientific applications. , 2007, , .		17
31	Accelerating S3D: A GPGPU Case Study. Lecture Notes in Computer Science, 2010, , 122-131.	1.3	17
32	Auto-ignitive deflagration speed of methane (CH4) blended dimethyl-ether (DME)/air mixtures at stratified conditions. Combustion and Flame, 2020, 211, 377-391.	5.2	16
33	Experiences with High-Level Programming Directives for Porting Applications to GPUs. Lecture Notes in Computer Science, 2012, , 96-107.	1.3	12
34	Unsteady deflagration speed of an auto-ignitive dimethyl-ether (DME)/air mixture at stratified conditions. Proceedings of the Combustion Institute, 2019, 37, 4717-4727.	3.9	11
35	Development of a CPU/GPU portable software library for Lagrangianâ€“Eulerian simulations of liquid sprays. International Journal of Multiphase Flow, 2020, 128, 103293.	3.4	10
36	A sharp interface model for deterministic simulation of dendrite growth. Computational Materials Science, 2019, 169, 109097.	3.0	9

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37	High Order Anchoring and Reinitialization of Level Set Function for Simulating Interface Motion. Journal of Scientific Computing, 2019, 81, 1963-1986.	2.3	8
38	An out-of-distribution-aware autoencoder model for reduced chemical kinetics. Discrete and Continuous Dynamical Systems - Series S, 2022, 15, 913.	1.1	7
39	Effects of Mixture Inhomogeneity on the Auto-Ignition of Reactants Under HCCI Environment. , 2004, , .		6
40	ANALYTICAL MODEL FOR AUTO-IGNITION IN A THERMALLY STRATIFIED HCCI ENGINE. Combustion Science and Technology, 2007, 179, 1963-1989.	2.3	6
41	Large Eddy Simulation of a Supercritical Fuel Jet in Cross Flow using GPU-Acceleration. , 2016, , .		6
42	Empirical Analysis of a Large-Scale Hierarchical Storage System. Lecture Notes in Computer Science, 2008, , 130-140.	1.3	6
43	High Fidelity Large Eddy Simulation of Reacting Supercritical Fuel Jet-in-Cross-Flow using GPU acceleration. , 2016, , .		5
44	Reduced Models for Chemical Kinetics derived from Parallel Ensemble Simulations of Stirred Reactors. , 2020, , .		4
45	Microstructural and infiltration properties of woven preforms during chemical vapor infiltration. Journal of the American Ceramic Society, 2022, 105, 4595-4607.	3.8	4
46	Chemical vapor infiltration of additively manufactured preforms: Poreâ€resolved simulations and experimental validation. Journal of the American Ceramic Society, 2022, 105, 2421-2441.	3.8	3
47	High-fidelity simulations for clean and efficient combustion of alternative fuels. Journal of Physics: Conference Series, 2008, 125, 012028.	0.4	2
48	Accelerating the Computation of Detailed Chemical Reaction Kinetics for Simulating Combustion of Complex Fuels. , 2012, , .		2
49	GPU-accelerated Software Library for Unsteady Flamelet Modeling of Turbulent Combustion with Complex Chemical Kinetics. , 2013, , .		2
50	Genetic algorithm based task reordering to improve the performance of batch scheduled massively parallel scientific applications. Concurrency Computation Practice and Experience, 2015, 27, 4763-4783.	2.2	2
51	On the Ignition and the Combustion of Supercritical Fuel Jet-In-Cross-Flow. , 2017, , .		2
52	Characteristics of flow through randomly packed impermeable and permeable particles using pore resolved simulations. Chemical Engineering Science, 2020, 228, 115969.	3.8	2
53	An Adaptive Particle Tracking Algorithm for Lagrangian-Eulerian Simulations of Dispersed Multiphase Flows. , 2019, , .		1
54	A priori examination of reduced chemistry models derived from canonical stirred reactors using three-dimensional direct numerical simulation datasets. , 2021, , .		1

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55	Impact of Quad-Core Cray XT4 System and Software Stack on Scientific Computation. Lecture Notes in Computer Science, 2009, , 334-344.	1.3	1
56	Application of space-time method to steady flows. , 1999, , .		0
57	Study of Turbulent Premixed Flame Thickness using Direct Numerical Simulation in a Slot Burner Configuration. , 2006, , .		0
58	High-fidelity simulations for clean and efficient combustion of alternative fuels. Journal of Physics: Conference Series, 2009, 180, 012033.	0.4	0