Sharath S Girimaji

List of Publications by Year
in descending order

58	2,359	25	48
papers	citations	h-index	g-index
		236925	206112

60	60	60	1175
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Partially-Averaged Navier-Stokes Model for Turbulence: A Reynolds-Averaged Navier-Stokes to Direct Numerical Simulation Bridging Method. Journal of Applied Mechanics, Transactions ASME, 2006, 73, 413-421.	2.2	393
2	DNS and LES of decaying isotropic turbulence with and without frame rotation using lattice Boltzmann method. Journal of Computational Physics, 2005, 209, 599-616.	3.8	218
3	LES of turbulent square jet flow using an MRT lattice Boltzmann model. Computers and Fluids, 2006, 35, 957-965.	2.5	159
4	Analysis and modeling of subgrid scalar mixing using numerical data. Physics of Fluids, 1996, 8, 1224-1236.	4.0	114
5	Fully explicit and self-consistent algebraic Reynolds stress model. Theoretical and Computational Fluid Dynamics, 1996, 8, 387-402.	2.2	108
6	Partially Averaged Navier-Stokes Method for Turbulence: Fixed Point Analysis and Comparison With Unsteady Partially Averaged Navier-Stokes. Journal of Applied Mechanics, Transactions ASME, 2006, 73, 422-429.	2.2	105
7	Lattice Boltzmann simulations of decaying homogeneous isotropic turbulence. Physical Review E, 2005, 71, 016708.	2.1	87
8	Velocity gradient invariants and local flow-field topology in compressible turbulence. Journal of Turbulence, 2010, 11, N2.	1.4	76
9	On the modeling of scalar diffusion in isotropic turbulence. Physics of Fluids A, Fluid Dynamics, 1992, 4, 2529-2537.	1.6	72
10	Velocity-Gradient Dynamics in Turbulence: Effect of Viscosity and Forcing. Theoretical and Computational Fluid Dynamics, 2003, 16, 421-432.	2.2	67
11	Partially Averaged Navierâ€“Stokes (PANS) Method for Turbulence Simulations: Flow Past a Circular Cylinder. Journal of Fluids Engineering, Transactions of the ASME, 2010, 132, .	1.5	65
12	A Galilean invariant explicit algebraic Reynolds stress model for turbulent curved flows. Physics of Fluids, 1997, 9, 1067-1077.	4.0	60
13	Partially Averaged Navierâ€“Stokes (PANS) Method for Turbulence Simulationsâ€"Flow Past a Square Cylinder. Journal of Fluids Engineering, Transactions of the ASME, 2010, 132, .	1.5	55
14	Near-field turbulent simulations of rectangular jets using lattice Boltzmann method. Physics of Fluids, 2005, 17, 125106.	4.0	50
15	Pressureâ€“strain correlation modelling of complex turbulent flows. Journal of Fluid Mechanics, 2000, 422, 91-123.	3.4	46
16	Direct numerical simulations of homogeneous turbulence subject to periodic shear. Journal of Fluid Mechanics, 2006, 566, 117.	3.4	38
17	Closure modeling in bridging regions of variable-resolution (VR) turbulence computations. Journal of Turbulence, 2013, 14, 72-98.	1.4	36
18	Intercomponent energy transfer in incompressible homogeneous turbulence: multi-point physics and amenability to one-point closures. Journal of Fluid Mechanics, 2013, 731, 639-681.	3.4	35

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19	Suppression mechanism of Kelvin-Helmholtz instability in compressible fluid flows. Physical Review E, 2016, 93, 041102.	2.1	33
20	Effect of compressibility on turbulent velocity gradients and small-scale structure. Journal of Turbulence, 2009, 10, N9.	1.4	32
21	Pressureâ€“Strain Correlation Modeling: Towards Achieving Consistency with Rapid Distortion Theory. Flow, Turbulence and Combustion, 2010, 85, 593-619.	2.6	31
22	Boltzmannâ€“BGK approach to simulating weakly compressible 3D turbulence: comparison between lattice Boltzmann and gas kinetic methods. Journal of Turbulence, 2007, 8, N46.	1.4	29
23	A new perspective on realizability of turbulence models. Journal of Fluid Mechanics, 2004, 512, .	3.4	28
24	On the realizability of pressureâ€“strain closures. Journal of Fluid Mechanics, 2014, 755, 535-560.	3.4	28
25	Boltzmann Kinetic Equation for Filtered Fluid Turbulence. Physical Review Letters, 2007, 99, 034501.	7.8	27
26	Lattice Boltzmann DNS of decaying compressible isotropic turbulence with temperature fluctuations. International Journal of Computational Fluid Dynamics, 2006, 20, 401-413.	1.2	23
27	Influence of flow topology and dilatation on scalar mixing in compressible turbulence. Journal of Fluid Mechanics, 2016, 793, 633-655.	3.4	23
28	Stabilizing action of pressure in homogeneous compressible shear flows: effect of Mach number and perturbation obliqueness. Journal of Fluid Mechanics, 2014, 760, 540-566.	3.4	22
29	Extension of Boussinesq turbulence constitutive relation for bridging methods. Journal of Turbulence, 2007, 8, N31.	1.4	18
30	Toward second-moment closure modelling of compressible shear flows. Journal of Fluid Mechanics, 2013, 733, 325-369.	3.4	18
31	Velocity gradient dynamics in compressible turbulence: Characterization of pressure-Hessian tensor. Physics of Fluids, 2013, 25, .	4.0	16
32	Influence of orientation on the evolution of small perturbations in compressible shear layers with inflection points. Physical Review E, 2017, 95, 033112.	2.1	16
33	On the Reynolds number dependence of velocity-gradient structure and dynamics. Journal of Fluid Mechanics, 2019, 861, 163-179.	3.4	16
34	Explicit algebraic Reynolds stress model (EARSM) for compressible shear flows. Theoretical and Computational Fluid Dynamics, 2014, 28, 171-196.	2.2	15
35	Characterizing velocity fluctuations in partially resolved turbulence simulations. Physics of Fluids, 2014, 26, .	4.0	15
36	Unified Gas Kinetic Scheme and Direct Simulation Monte Carlo Computations of High-Speed Lid-Driven Microcavity Flows. Communications in Computational Physics, 2015, 17, 1127-1150.	1.7	15

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37	A study of multiscalar mixing. Physics of Fluids A, Fluid Dynamics, 1993, 5, 1802-1809.	1.6	13
38	Non-equilibrium thermal transport and entropy analyses in rarefied cavity flows. Journal of Fluid Mechanics, 2019, 864, 995-1025.	3.4	13
39	Hydrodynamic stability of three-dimensional homogeneous flow topologies. Physical Review E, 2015, 92, 053001.	2.1	12
40	Small perturbation evolution in compressible Poiseuille flow: pressureâ€"velocity interactions and obliqueness effects. Journal of Fluid Mechanics, 2017, 814, 249-276.	3.4	12
41	Study of axis-switching and stability of laminar rectangular jets using lattice Boltzmann method. Computers and Mathematics With Applications, 2008, 55, 1611-1619.	2.7	10
42	On the Invariance of Compressible Navierâ€"Stokes and Energy Equations Subject to Density-Weighted Filtering. Flow, Turbulence and Combustion, 2010, 85, 383-396.	2.6	10
43	Instability of Poiseuille flow at extreme Mach numbers: Linear analysis and simulations. Physical Review E, 2014, 89, 043001.	2.1	10
44	Pressure-strain energy redistribution in compressible turbulence: return-to-isotropy versus kinetic-potential energy equipartition. Physica Scripta, 2016, 91, 084006.	2.5	10
45	Mechanisms of canonical Kelvin-Helmholtz instability suppression in magnetohydrodynamic flows. Physics of Fluids, 2019, 31, .	4.0	10
46	Nonlinear evolution of perturbations in high Mach number wall-bounded flow: Pressureâ€"dilatation effects. Physics of Fluids, 2020, 32, .	4.0	10
47	Fully Explicit and Self-Consistent Algebraic Reynolds Stress Model. Theoretical and Computational Fluid Dynamics, 1996, 8, 387-402.	2.2	10
48	Flow-thermodynamics interactions in decaying anisotropic compressible turbulence with imposed temperature fluctuations. Theoretical and Computational Fluid Dynamics, 2013, 27, 115-131.	2.2	9
49	Modeling Turbulent Scalar Mixing as Enhanced Diffusion. Combustion Science and Technology, 1994, 97, 85-98.	2.3	8
50	Lower-Dimensional Manifold (Algebraic) Representation of Reynolds Stress Closure Equations. Theoretical and Computational Fluid Dynamics, 2001, 14, 259-281.	2.2	8
51	Velocity-gradient dynamics in compressible turbulence: influence of Mach number and dilatation rate. Journal of Turbulence, 2012, 13, N8.	1.4	7
52	Magneto-Gas Kinetic Method for Nonideal Magnetohydrodynamics Flows: Verification Protocol and Plasma Jet Simulations. Journal of Fluids Engineering, Transactions of the ASME, 2015, 137, .	1.5	6
53	Magnetic Field Effects on Axis-Switching and Instabilities in Rectangular Plasma Jets. Flow, Turbulence and Combustion, 2009, 82, 375-390.	2.6	3
54	The effect of magnetic field on perturbation evolution in homogeneously sheared flows. Journal of Fluid Mechanics, 2019, 858, 852-880.	3.4	3

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55	Magnetohydrodynamic Turbulence Decay Under the Influence of Uniform or Random Magnetic Fields. Journal of Fluids Engineering, Transactions of the ASME, 2011, 133, .	1.5	2
56	Characterization of Flow-Magnetic Field Interactions in Magneto-Hydrodynamic Turbulence. Journal of Computational and Nonlinear Dynamics, 2013, 8, .	1.2	2
57	Preconditions and limitations of the postulate of scalar-dissipationâ€“conductivity independence in a variable conductivity medium. Physical Review E, 2011, 84, 046318.	2.1	1
58	Local vortex line topology and geometry in turbulence. Journal of Fluid Mechanics, 2021, 924, .	3.4	1