Sutanu Sarkar

List of Publications by Citations

114 papers	5,120 citations	34 h-index	70 g-index
122 ext. papers	5,939 ext. citations	3.9 avg, IF	5.78 L-index

#	Paper	IF	Citations
114	Modelling the pressure–strain correlation of turbulence: an invariant dynamical systems approach. *Journal of Fluid Mechanics*, **1991**, 227, 245-272	3.7	1083
113	The analysis and modelling of dilatational terms in compressible turbulence. *Journal of Fluid Mechanics*, **1991**, 227, 473-493	3.7	469
112	The formation and fate of internal waves in the South China Sea. *Nature*, **2015**, 521, 65-9	50.4	298
111	A study of compressibility effects in the high-speed turbulent shear layer using direct simulation. *Journal of Fluid Mechanics*, **2002**, 451, 329-371	3.7	254
110	The stabilizing effect of compressibility in turbulent shear flow. *Journal of Fluid Mechanics*, **1995**, 282, 163-186	3.7	200
109	An investigation of stably stratified turbulent channel flow using large-eddy simulation. *Journal of Fluid Mechanics*, **2002**, 459, 1-42	3.7	159
108	A study of the flow-field evolution and mixing in a planar turbulent jet using direct numerical simulation. *Journal of Fluid Mechanics*, **2002**, 450, 377-407	3.7	156
107	The pressure–dilatation correlation in compressible flows. *Physics of Fluids A, Fluid Dynamics*, **1992**, 4, 2674-2682		153
106	Application of a Reynolds stress turbulence model to the compressible shear layer. *AIAA Journal*, **1991**, 29, 743-749	2.1	128
105	Direct numerical simulations of the turbulence evolution in a uniformly sheared and stably stratified flow. *Journal of Fluid Mechanics*, **1997**, 342, 231-261	3.7	123
104	Compressibility effects and turbulence scalings in supersonic channel flow. *Journal of Fluid Mechanics*, **2004**, 509, 207-216	3.7	119
103	Large eddy simulation of a plane jet. *Physics of Fluids*, **1999**, 11, 3069-3083	4.4	81
102	Mixing of a conserved scalar in a turbulent reacting shear layer. *Journal of Fluid Mechanics*, **2003**, 481, 291-328	3.7	80
101	Proposed orbital ordering in MnV2O4 from first-principles calculations. *Physical Review Letters*, **2009**, 102, 216405	7.4	79
100	A simple nonlinear model for the return to isotropy in turbulence. *Physics of Fluids A, Fluid Dynamics* , **1990**, 2, 84-93		73
99	Simulations of Spatially Developing Two-Dimensional Shear Layers and Jets. *Theoretical and Computational Fluid Dynamics*, **1997**, 9, 121-147	2.3	58
98	ASIRI: An Ocean–Atmosphere Initiative for Bay of Bengal. *Bulletin of the American Meteorological Society*, **2016**, 97, 1859-1884	6.1	55

97	A comparative study of self-propelled and towed wakes in a stratified fluid. *Journal of Fluid Mechanics*, **2010**, 652, 373-404	3.7	55
96	FSI Simulation of two back-to-back wind turbines in atmospheric boundary layer flow. *Computers and Fluids*, **2017**, 158, 167-175	2.8	53
95	Direct simulation of compressible turbulence in a shear flow. *Theoretical and Computational Fluid Dynamics*, **1991**, 2, 291-305	2.3	53
94	Stratification Effects in a Bottom Ekman Layer. *Journal of Physical Oceanography*, **2008**, 38, 2535-2555	2.4	51
93	Dynamics of a stratified shear layer with horizontal shear. *Journal of Fluid Mechanics*, **2006**, 568, 19	3.7	49
92	From Topographic Internal Gravity Waves to Turbulence. *Annual Review of Fluid Mechanics*, **2017**, 49, 195-220	22	43
91	Internal gravity waves generated by a turbulent bottom Ekman layer. *Journal of Fluid Mechanics*, **2007**, 590, 331-354	3.7	43
90	Turbulence during the generation of internal tide on a critical slope. *Physical Review Letters*, **2010**, 104, 218502	7.4	41
89	On the turbulence structure in inert and reacting compressible mixing layers. *Journal of Fluid Mechanics*, **2007**, 593, 171-180	3.7	41
88	Dynamics of a stratified shear layer above a region of uniform stratification. *Journal of Fluid Mechanics*, **2009**, 630, 191-223	3.7	39
87	Evolution of an initially turbulent stratified shear layer. *Physics of Fluids*, **2007**, 19, 105105	4.4	39
86	Direct and large-eddy simulations of internal tide generation at a near-critical slope. *Journal of Fluid Mechanics*, **2011**, 681, 48-79	3.7	38
85	Large eddy simulation of a stratified boundary layer under an oscillatory current. *Journal of Fluid Mechanics*, **2010**, 643, 233-266	3.7	37
84	The compressible mixing layer: an LES study. *Theoretical and Computational Fluid Dynamics*, **2010**, 24, 565-588	2.3	36
83	Large-eddy simulation of variable-density round and plane jets. *International Journal of Heat and Fluid Flow*, **2010**, 31, 307-314	2.4	36
82	On the relationship between the mean flow and subgrid stresses in large eddy simulation of turbulent shear flows. *Physics of Fluids*, **1999**, 11, 1229-1248	4.4	36
81	The effect of nonvertical shear on turbulence in a stably stratified medium. *Physics of Fluids*, **1998**, 10, 1158-1168	4.4	34
80	Computation of the Flow Over a Sphere at Re = 3700: A Comparison of Uniform and Turbulent Inflow Conditions. *Journal of Applied Mechanics, Transactions ASME*, **2014**, 81,	2.7	30

79	Boundary mixing by density overturns in an internal tidal beam. *Geophysical Research Letters*, **2011**, 38, n/a-n/a	4.9	29
78	On the computation of sound by large-eddy simulations. *Journal of Engineering Mathematics*, **1997**, 32, 217-236	1.2	28
77	Statistical analysis of the rate of strain tensor in compressible homogeneous turbulence. *Physics of Fluids A, Fluid Dynamics*, **1993**, 5, 3240-3254		26
76	The Interplay Between Submesoscale Instabilities and Turbulence in the Surface Layer of the Bay of Bengal. *Oceanography*, **2016**, 29, 146-157	2.3	26
75	Mixing, Dissipation Rate, and Their Overturn-Based Estimates in a Near-Bottom Turbulent Flow Driven by Internal Tides. *Journal of Physical Oceanography*, **2015**, 45, 1969-1987	2.4	24
74	Degradation of an internal wave beam by parametric subharmonic instability in an upper ocean pycnocline. *Journal of Geophysical Research: Oceans*, **2013**, 118, 4689-4698	3.3	24
73	Direct numerical simulation of stratified flow past a sphere at a subcritical Reynolds number of 3700 and moderate Froude number. *Journal of Fluid Mechanics*, **2017**, 826, 5-31	3.7	23
72	On the Shear Number Effect in Stratified Shear Flow. *Theoretical and Computational Fluid Dynamics*, **1999**, 13, 171-188	2.3	23
71	Tidal conversion and turbulence at a model ridge: direct and large eddy simulations. *Journal of Fluid Mechanics*, **2013**, 715, 181-209	3.7	22
70	Direct and large eddy simulations of a bottom Ekman layer under an external stratification. *International Journal of Heat and Fluid Flow*, **2008**, 29, 721-732	2.4	21
69	A subgrid model for nonlinear functions of a scalar. *Physics of Fluids*, **2001**, 13, 3803-3819	4.4	21
68	Large-Eddy Simulation of Deep-Cycle Turbulence in an Equatorial Undercurrent Model. *Journal of Physical Oceanography*, **2013**, 43, 2490-2502	2.4	20
67	Internal waves and turbulence in a stable stratified jet. *Journal of Fluid Mechanics*, **2010**, 648, 297-324	3.7	20
66	A Direct Numerical Study of Transport and Anisotropy in a Stably Stratified Turbulent Flow with Uniform Horizontal Shear. *Flow, Turbulence and Combustion*, **2000**, 63, 343-360	2.5	20
65	On testing models for the pressure–strain correlation of turbulence using direct simulations. *Physics of Fluids A, Fluid Dynamics*, **1992**, 4, 2887-2899		20
64	Effect of the Prandtl number on a stratified turbulent wake. *Physics of Fluids*, **2010**, 22, 095102	4.4	19
63	Tidal flow over topography: effect of excursion number on wave energetics and turbulence. *Journal of Fluid Mechanics*, **2014**, 750, 259-283	3.7	18
62	Seasonality of Deep Cycle Turbulence in the Eastern Equatorial Pacific. *Journal of Physical Oceanography*, **2017**, 47, 2189-2209	2.4	18

61	The spatial evolution of fluctuations in a self-propelled wake compared to a patch of turbulence. *Physics of Fluids*, **2013**, 25, 095106	4.4	16
60	On the vortex dynamics of flow past a sphere at Re = 3700 in a uniformly stratified fluid. *Physics of Fluids*, **2017**, 29, 020704	4.4	15
59	Simulation of a propelled wake with moderate excess momentum in a stratified fluid. *Journal of Fluid Mechanics*, **2012**, 692, 28-52	3.7	15
58	Transport and mixing of density in a continuously stratified shear layer. *Journal of Turbulence*, **2010**, 11, N24	2.1	15
57	Negative turbulent production during flow reversal in a stratified oscillating boundary layer on a sloping bottom. *Physics of Fluids*, **2011**, 23, 101703	4.4	15
56	Validation of acoustic-analogy predictions for sound radiated by turbulence. *Physics of Fluids*, **2000**, 12, 381-391	4.4	15
55	Ageostrophic Secondary Circulation at a Submesoscale Front and the Formation of Gravity Currents. *Journal of Physical Oceanography*, **2018**, 48, 2507-2529	2.4	15
54	Pulsating turbulence in a marginally unstable stratified shear flow. *Journal of Fluid Mechanics*, **2017**, 822, 327-341	3.7	13
53	Turbulence during the reflection of internal gravity waves at critical and near-critical slopes. *Journal of Fluid Mechanics*, **2013**, 729, 47-68	3.7	13
52	Large eddy simulation of the near to intermediate wake of a heated sphere at . *International Journal of Heat and Fluid Flow*, **2014**, 49, 2-10	2.4	12
51	Effects of three-dimensionality on instability and turbulence in a frontal zone. *Journal of Fluid Mechanics*, **2015**, 784, 252-273	3.7	11
50	Heat and mass transfer in partial enclosures. *Journal of Thermophysics and Heat Transfer*, **1987**, 1, 253-259	1.3	11
49	The submesoscale, the finescale and their interaction at a mixed layer front. *Ocean Modelling*, **2019**, 140, 101400	3	10
48	Effect of external turbulence on the evolution of a wake in stratified and unstratified environments. *Journal of Fluid Mechanics*, **2015**, 772, 361-385	3.7	10
47	Large Eddy Simulations of a Stratified Shear Layer. *Journal of Fluids Engineering, Transactions of the ASME*, **2014**, 136,	2.1	10
46	Analyzing the influence of compressibility on the rapid pressure–strain rate correlation in turbulent shear flows. *Theoretical and Computational Fluid Dynamics*, **2007**, 21, 171-199	2.3	10
45	The effect of stable stratification on turbulence anisotropy in uniformly sheared flow. *Computers and Mathematics With Applications*, **2003**, 46, 639-646	2.7	10
44	An immersed boundary method for direct and large eddy simulation of stratified flows in complex geometry. *Journal of Computational Physics*, **2016**, 322, 511-534	4.1	10

43	Direct Numerical Simulation of Turbulence Collapse and Rebirth in Stably Stratified Ekman Flow. *Boundary-Layer Meteorology*, **2017**, 162, 401-426	3.4	9
42	Flow and heat transfer in convectively unstable turbulent channel flow with solid-wall heat conduction. *Journal of Fluid Mechanics*, **2014**, 757, 57-81	3.7	9
41	Regeneration of turbulent fluctuations in low-Froude-number flow over a sphere at a Reynolds number of 3700. *Journal of Fluid Mechanics*, **2016**, 804,	3.7	9
40	Turbulent entrainment in a strongly stratified barrier layer. *Journal of Geophysical Research: Oceans*, **2017**, 122, 5075-5087	3.3	8
39	Decay of turbulent wakes behind a disk in homogeneous and stratified fluids. *Journal of Fluid Mechanics*, **2020**, 885,	3.7	8
38	SOMAR-LES: A framework for multi-scale modeling of turbulent stratified oceanic flows. *Ocean Modelling*, **2017**, 120, 101-119	3	8
37	PSI to turbulence during internal wave beam refraction through the upper ocean pycnocline. *Geophysical Research Letters*, **2014**, 41, 8953-8960	4.9	7
36	Evolution of a stratified rotating shear layer with horizontal shear. Part I. Linear stability. *Journal of Fluid Mechanics*, **2012**, 703, 29-48	3.7	7
35	Near-N Oscillations and Deep-Cycle Turbulence in an Upper-Equatorial Undercurrent Model. *Journal of Physical Oceanography*, **2012**, 42, 2169-2184	2.4	7
34	PSI in the case of internal wave beam reflection at a uniform slope. *Journal of Fluid Mechanics*, **2016** , 789, 347-367	3.7	7
33	Hybrid spatially-evolving DNS model of flow past a sphere. *Computers and Fluids*, **2018**, 171, 41-52	2.8	7
32	Large Eddy Simulation of Flow and Turbulence at the Steep Topography of Luzon Strait. *Geophysical Research Letters*, **2017**, 44, 9440-9448	4.9	5
31	Effect of fully characterized unsteady flow on population growth of the dinoflagellate Lingulodinium polyedrum. *Limnology and Oceanography*, **2009**, 54, 1243-1256	4.8	5
30	Mixing in a stably stratified medium by horizontal shear near vertical walls. *Theoretical and Computational Fluid Dynamics*, **2004**, 17, 331-349	2.3	5
29	Spectral proper orthogonal decomposition analysis of the turbulent wake of a disk at Re = 50 000. *Physical Review Fluids*, **2020**, 5,	2.8	5
28	Turbulent shear layers in a uniformly stratified background: DNS at high Reynolds number. *Journal of Fluid Mechanics*, **2021**, 916,	3.7	5
27	Lagrangian three-dimensional transport and dispersion by submesoscale currents at an upper-ocean front. *Ocean Modelling*, **2021**, 165, 101844	3	5
26	On the Accuracy of Overturn-Based Estimates of Turbulent Dissipation at Rough Topography. *Journal of Physical Oceanography*, **2017**, 47, 513-532	2.4	4

25	Stratified flow past a prolate spheroid. *Physical Review Fluids*, **2019**, 4,	2.8	4
24	The role of turbulence in strong submesoscale fronts of the Bay of Bengal. *Deep-Sea Research Part II: Topical Studies in Oceanography*, **2019**, 168, 104644	2.3	3
23	Stratified Ekman layers evolving under a finite-time stabilizing buoyancy flux. *Journal of Fluid Mechanics*, **2018**, 840, 266-290	3.7	3
22	Intermittent patches of turbulence in a stratified medium with stable shear. *Journal of Turbulence*, **2012**, 13, N20	2.1	3
21	Mixing events in a stratified jet subject to surface wind and buoyancy forcing. *Journal of Fluid Mechanics*, **2011**, 685, 54-82	3.7	3
20	The Saaz Framework for Turbulent Flow Queries **2011**,		3
19	On Density and Pressure Fluctuations in Uniformly Sheared Compressible Flow. *Fluid Mechanics and Its Applications*, **1997**, 325-332	0.2	3
18	Turbulence and Thermal Structure in the Upper Ocean: Turbulence-Resolving Simulations. *Flow, Turbulence and Combustion*, **2019**, 103, 985-1009	2.5	2
17	Angular dispersion of material lines in isotropic turbulence. *Physics of Fluids*, **1987**, 30, 1269		2
16	Large eddy simulation of evolution of a passive scalar in plane jet. *AIAA Journal*, **2001**, 39, 1509-1516	2.1	2
15	Investigation of LES models for a stratified shear layer. *Computers and Fluids*, **2020**, 198, 104405	2.8	2
14	High-Reynolds-number wake of a slender body. *Journal of Fluid Mechanics*, **2021**, 918,	3.7	2
13	Interaction between Upper-Ocean Submesoscale Currents and Convective Turbulence. *Journal of Physical Oceanography*, **2022**, 52, 437-458	2.4	2
12	Oscillatory stratified flow over supercritical topography: Wave energetics and turbulence. *Computers and Fluids*, **2017**, 158, 39-48	2.8	1
11	Energetics and mixing in buoyancy-driven near-bottom stratified flow. *Journal of Fluid Mechanics*, **2019**, 869, 214-237	3.7	1
10	Scaling Laws in the Axisymmetric Wake of a Sphere. *ERCOFTAC Series*, **2019**, 439-444	0.1	1
9	Evolution of a stratified rotating shear layer with horizontal shear. Part 2. Nonlinear evolution. *Journal of Fluid Mechanics*, **2013**, 732, 373-400	3.7	1
8	Magneto-optic probe measurements in low density-supersonic jets. *Journal of Instrumentation*, **2017**, 12, P12001-P12001	1	1

7	Evolution of an asymmetric turbulent shear layer in a thermocline. *Journal of Turbulence*, **2014**, 15, 449-471	2.1	1
6	A continuum two-fluid theory for dilute fiber suspensions. *Acta Mechanica*, **1989**, 80, 201-226	2.1	1
5	The wake of a three-dimensional underwater obstacle: Effect of bottom boundary conditions. *Ocean Modelling*, **2020**, 149, 101611	3	1
4	Tidal Synchronization of Lee Vortices in Geophysical Wakes. *Geophysical Research Letters*, **2021**, 48, e2020GL090905	4.9	0
3	Compressibility Effects on Turbulence Growth in High-Speed Shear Flows. *Applied Mechanics Reviews*, **1994**, 47, S179-S183	8.6	
2	Variable Density Fluid Turbulence. Fluid Mechanics and its Applications, Vol 69. *Applied Mechanics Reviews*, **2003**, 56, B72-B73	8.6	
1	Global modes and large-scale structures in an Ekman boundary layer. *Journal of Physics: Conference Series*, **2020**, 1522, 012011	0.3	