Javier Jimenez

List of Publications by Year
in descending order

170 papers	15,183 citations	26567 56 h-index	17055 122 g-index
176 all docs	176 docs citations	176 times ranked	4823 citing authors

#	Article	IF	Citations
1	TURBULENT FLOWS OVER ROUGH WALLS. Annual Review of Fluid Mechanics, 2004, 36, 173-196.	10.8	1,168
2	The minimal flow unit in near-wall turbulence. Journal of Fluid Mechanics, 1991, 225, 213-240.	1.4	892
3	The structure of intense vorticity in isotropic turbulence. Journal of Fluid Mechanics, 1993, 255, 65.	1.4	883
4	Scaling of the velocity fluctuations in turbulent channels up to Reï„=2003. Physics of Fluids, 2006, 18, 011702.	1.6	770
5	Boltzmann Approach to Lattice Gas Simulations. Europhysics Letters, 1989, 9, 663-668.	0.7	713
6	The autonomous cycle of near-wall turbulence. Journal of Fluid Mechanics, 1999, 389, 335-359.	1.4	676
7	Scaling of the energy spectra of turbulent channels. Journal of Fluid Mechanics, 2004, 500, 135-144.	1.4	574
8	Spectra of the very large anisotropic scales in turbulent channels. Physics of Fluids, 2003, 15, L41.	1.6	408
9	Effect of the computational domain on direct simulations of turbulent channels up to ReÏ„ = 4200. Physics of Fluids, 2014, 26, .	1.6	318
10	Self-similar vortex clusters in the turbulent logarithmic region. Journal of Fluid Mechanics, 2006, 561, 329.	1.4	312
11	One-point statistics for turbulent wall-bounded flows at Reynolds numbers up to Î´+ â‰ˆ 2000. Physics of Fluids, 2013, 25, .	1.6	311
12	Estimation of turbulent convection velocities and corrections to Taylor's approximation. Journal of Fluid Mechanics, 2009, 640, 5-26.	1.4	306
13	Coherent structures in wall-bounded turbulence. Journal of Fluid Mechanics, 2018, 842, .	1.4	305
14	Reynolds number effects on the Reynolds-stress budgets in turbulent channels. Physics of Fluids, 2008, 20, .	1.6	291
15	Cascades in Wall-Bounded Turbulence. Annual Review of Fluid Mechanics, 2012, 44, 27-45.	10.8	283
16	Linear energy amplification in turbulent channels. Journal of Fluid Mechanics, 2006, 559, 205.	1.4	282
17	Turbulent boundary layers and channels at moderate Reynolds numbers. Journal of Fluid Mechanics, 2010, 657, 335-360.	1.4	266
18	Drag reduction by riblets. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 1412-1427.	1.6	246

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19	A high-resolution code for turbulent boundary layers. Journal of Computational Physics, 2009, 228, 4218-4231.	1.9	225
20	Turbulent fluctuations above the buffer layer of wall-bounded flows. Journal of Fluid Mechanics, 2008, 611, 215-236.	1.4	216
21	The three-dimensional structure of momentum transfer in turbulent channels. Journal of Fluid Mechanics, 2012, 694, 100-130.	1.4	199
22	Two-point statistics for turbulent boundary layers and channels at Reynolds numbers up to Î´+ â‰ˆ 2000. Physics of Fluids, 2014, 26, .	1.6	190
23	On the performance of particle tracking. Journal of Fluid Mechanics, 1987, 185, 447-468.	1.4	185
24	On the characteristics of vortex filaments in isotropic turbulence. Journal of Fluid Mechanics, 1998, 373, 255-285.	1.4	181
25	Geometry and clustering of intense structures in isotropic turbulence. Journal of Fluid Mechanics, 2004, 513, 111-133.	1.4	173
26	Time-resolved evolution of coherent structures in turbulent channels: characterization of eddiesÂand cascades. Journal of Fluid Mechanics, 2014, 759, 432-471.	1.4	172
27	Hierarchy of minimal flow units in the logarithmic layer. Physics of Fluids, 2010, 22, .	1.6	169
28	A spanwise structure in the plane shear layer. Journal of Fluid Mechanics, 1983, 132, 319-336.	1.4	166
29	Hydrodynamic stability and breakdown of the viscous regime over riblets. Journal of Fluid Mechanics, 2011, 678, 317-347.	1.4	165
30	The large-scale dynamics of near-wall turbulence. Journal of Fluid Mechanics, 2004, 505, 179-199.	1.4	157
31	Turbulent shear flow over active and passive porous surfaces. Journal of Fluid Mechanics, 2001, 442, 89-117.	1.4	150
32	On the generation of turbulent wall friction. Physics of Fluids, 1994, 6, 634-641.	1.6	131
33	Computer analysis of a high-speed film of the plane turbulent mixing layer. Journal of Fluid Mechanics, 1982, 119, 323-345.	1.4	130
34	Kinematic alignment effects in turbulent flows. Physics of Fluids A, Fluid Dynamics, 1992, 4, 652-654.	1.6	116
35	Effect of wall-boundary disturbances on turbulent channel flows. Journal of Fluid Mechanics, 2006, 566, 357.	1.4	110
36	A perspective view of the plane mixing layer. Journal of Fluid Mechanics, 1985, 152, 125-143.	1.4	106

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37	A priori testing of subgrid models for chemically reacting non-premixed turbulent shear flows. Journal of Fluid Mechanics, 1997, 349, 149-171.	1.4	102
38	Characterization of near-wall turbulence in terms of equilibrium and â€œburstingâ€•solutions. Physics of Fluids, 2005, 17, 015105.	1.6	94
39	How linear is wall-bounded turbulence?. Physics of Fluids, 2013, 25, .	1.6	86
40	Transition to turbulence in two-dimensional Poiseuille flow. Journal of Fluid Mechanics, 1990, 218, 265.	1.4	85
41	The turbulent cascade in five dimensions. Science, 2017, 357, 782-784.	6.0	84
42	Computer graphic display method for visualizing three-dimensional biological structures. Science, 1986, 232, 1113-1115.	6.0	78
43	The structure of the vortices in freely decaying two-dimensional turbulence. Journal of Fluid Mechanics, 1996, 313, 209-222.	1.4	77
44	On the structure and control of near wall turbulence. Physics of Fluids, 1994, 6, 944-953.	1.6	76
45	What are we learning from simulating wall turbulence?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2007, 365, 715-732.	1.6	76
46	Properties of the turbulent/non-turbulent interface in boundary layers. Journal of Fluid Mechanics, 2016, 801, 554-596.	1.4	71
47	Cascades and wall-normal fluxes in turbulent channel flows. Journal of Fluid Mechanics, 2016, 796, 417-436.	1.4	69
48	Large-Eddy Simulations: Where Are We and What Can We Expect?. AIAA Journal, 2000, 38, 605-612.	1.5	66
49	Stability of a pair of co-rotating vortices. Physics of Fluids, 1975, 18, 1580.	1.4	65
50	Coherent structures in statistically stationary homogeneous shear turbulence. Journal of Fluid Mechanics, 2017, 816, 167-208.	1.4	65
51	Wall turbulence without walls. Journal of Fluid Mechanics, 2013, 723, 429-455.	1.4	64
52	Direct numerical simulation of statistically stationary and homogeneous shear turbulence and its relation to other shear flows. Physics of Fluids, 2016, 28, .	1.6	64
53	Vorticity organization in the outer layer of turbulent channels with disturbed walls. Journal of Fluid Mechanics, 2007, 591, 145-154.	1.4	62
54	Low-dimensional dynamics of a turbulent wall flow. Journal of Fluid Mechanics, 2001, 435, 81-91.	1.4	60

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55	A code for direct numerical simulation of turbulent boundary layers at high Reynolds numbers in BG/P supercomputers. Computers and Fluids, 2013, 80, 37-43.	1.3	60
56	Direct numerical simulation of a self-similar adverse pressure gradient turbulent boundary layer at the verge of separation. Journal of Fluid Mechanics, 2017, 829, 392-419.	1.4	58
57	Turbulent velocity fluctuations need not be Gaussian. Journal of Fluid Mechanics, 1998, 376, 139-147.	1.4	56
58	The physics of wall turbulence. Physica A: Statistical Mechanics and Its Applications, 1999, 263, 252-262.	1.2	54
59	A thinning algorithm based on contours. Computer Vision, Graphics, and Image Processing, 1987, 39, 186-201.	1.1	53
60	Computing high-Reynolds-number turbulence: will simulations ever replace experiments?. Journal of Turbulence, 2003, 4, .	0.5	51
61	A Critical Evaluation of the Resolution Properties of B-Spline and Compact Finite Difference Methods. Journal of Computational Physics, 2001, 174, 510-551.	1.9	49
62	Nonlinear gas oscillations in pipes. Part 1. Theory. Journal of Fluid Mechanics, 1973, 59, 23-46.	1.4	46
63	A statistical state dynamics-based study of the structure and mechanism of large-scale motions in plane Poiseuille flow. Journal of Fluid Mechanics, 2016, 809, 290-315.	1.4	44
64	Algebraic probability density tails in decaying isotropic two-dimensional turbulence. Journal of Fluid Mechanics, 1996, 313, 223-240.	1.4	43
65	Direct numerical simulation of a self-similar adverse pressure gradient turbulent boundary layer. International Journal of Heat and Fluid Flow, 2016, 61, 129-136.	1.1	42
66	Multiscale analysis of the topological invariants in the logarithmic region of turbulent channels at a friction Reynolds number of 932. Journal of Fluid Mechanics, 2016, 803, 356-394.	1.4	41
67	Intermittency and cascades. Journal of Fluid Mechanics, 2000, 409, 99-120.	1.4	40
68	Hyperviscous vortices. Journal of Fluid Mechanics, 1994, 279, 169-176.	1.4	39
69	Mean velocity and length-scales in the overlap region of wall-bounded turbulent flows. Physics of Fluids, 2011, 23, .	1.6	39
70	Some Experiments in Image Vectorization. IBM Journal of Research and Development, 1982, 26, 724-734.	3.2	37
71	The rollup of a vortex layer near a wall. Journal of Fluid Mechanics, 1993, 248, 297-313.	1.4	37
72	Ejection mechanisms in the sublayer of a turbulent channel. Physics of Fluids, 1988, 31, 1311.	1.4	36

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73	Scaling of turbulent structures in riblet channels up to Re Ï„â€“â‰ˆ 550. Physics of Fluids, 2012, 24, .	1.6	36
74	On the visual growth of a turbulent mixing layer. Journal of Fluid Mechanics, 1980, 96, 447-460.	1.4	35
75	On steady columnar vortices under local compression. Journal of Fluid Mechanics, 1995, 299, 367-388.	1.4	35
76	Linear instability of a corrugated vortex sheet â€“ a model for streak instability. Journal of Fluid Mechanics, 2003, 483, 315-342.	1.4	35
77	The temporal evolution of the energy flux across scales in homogeneous turbulence. Physics of Fluids, 2015, 27, .	1.6	35
78	Machine-aided turbulence theory. Journal of Fluid Mechanics, 2018, 854, .	1.4	34
79	Simulations of turbulent channels with prescribed velocity profiles. Journal of Fluid Mechanics, 2013, 723, 587-603.	1.4	32
80	Direct detection of linearized bursts in turbulence. Physics of Fluids, 2015, 27, .	1.6	31
81	On the linear stability of the inviscid KÃ¡rmÃ¡n vortex street. Journal of Fluid Mechanics, 1987, 178, 177-194.	1.4	30
82	Large-eddy simulations - Where are we and what can we expect?. AIAA Journal, 2000, 38, 605-612.	1.5	30
83	Bifurcations and bursting in two-dimensional Poiseuille flow. Physics of Fluids, 1987, 30, 3644.	1.4	27
84	The growth of a mixing layer in a laminar channel. Journal of Fluid Mechanics, 2005, 535, 245-254.	1.4	26
85	A boundary-layer analysis of Rayleigh-BÃ©nard convection at large Rayleigh number. Journal of Fluid Mechanics, 1987, 178, 53-71.	1.4	25
86	Logarithmic-layer turbulence: A view from the wall. Physical Review Fluids, 2019, 4, .	1.0	25
87	Dynamics of homogeneous shear turbulence: A key role of the nonlinear transverse cascade in the bypass concept. Physical Review E, 2016, 94, 023111.	0.8	24
88	Characteristics of the turbulent/nonturbulent interface in boundary layers, jets and shear-free turbulence. Journal of Physics: Conference Series, 2014, 506, 012015.	0.3	22
89	Small scale intermittency in turbulence. European Journal of Mechanics, B/Fluids, 1998, 17, 405-419.	1.2	16
90	Turbulence in the highly restricted dynamics of a closure at second order: comparison with DNS. Journal of Physics: Conference Series, 2014, 506, 012004.	0.3	16

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91	Linear stability of a non-symmetric, inviscid, KÃ¡rmÃ¡n street of small uniform vortices. Journal of Fluid Mechanics, 1988, 189, 337-348.	1.4	15
92	Analysis of a Turbulent Boundary Layer Subjected to a Strong Adverse Pressure Gradient. Journal of Physics: Conference Series, 2014, 506, 012007.	0.3	14
93	Intense structures of different momentum fluxes in turbulent channels. Physical Review Fluids, 2018, 3, .	1.0	14
94	Fourier/Chebyshev methods for the incompressible Navier-Stokes equations in infinite domains. Journal of Computational Physics, 1995, 121, 261-270.	1.9	13
95	Momentum transfer by linearised eddies in turbulent channel flows. Journal of Fluid Mechanics, 2020, 895, .	1.4	13
96	Entropy, irreversibility and cascades in the inertial range of isotropic turbulence. Journal of Fluid Mechanics, 2021, 915, .	1.4	13
97	Spontaneous generation of vortex crystals from forced two-dimensional homogeneous turbulence. Physics of Fluids, 2007, 19, .	1.6	12
98	Optimal fluxes and Reynolds stresses. Journal of Fluid Mechanics, 2016, 809, 585-600.	1.4	11
99	Numerically accurate computation of the conditional trajectories of the topological invariants in turbulent flows. Journal of Computational Physics, 2015, 295, 805-814.	1.9	10
100	Vertically localised equilibrium solutions in large-eddy simulations of homogeneous shearÂflow. Journal of Fluid Mechanics, 2017, 827, 225-249.	1.4	10
101	Computers and turbulence. European Journal of Mechanics, B/Fluids, 2020, 79, 1-11.	1.2	10
102	Monte Carlo science. Journal of Turbulence, 2020, 21, 544-566.	0.5	10
103	Fractal interfaces and product generation in the twoâ€dimensional mixing layer. Physics of Fluids A, Fluid Dynamics, 1991, 3, 1261-1268.	1.6	9
104	On the survival of strong vortex filaments in â€˜modelâ€™ turbulence. Journal of Fluid Mechanics, 1999, 394, 261-279.	1.4	9
105	The Contributions of A. N. Kolmogorov to the theory of turbulence. Arbor, 2004, CLXXVIII, 589-606.	0.1	9
106	Direct simulation of a zero-pressure-gradient turbulent boundary layer up toRe_{Î¸}= 6650. Journal of Physics: Conference Series, 2011, 318, 022023.	0.3	9
107	Direct Numerical Simulations of Wake-Perturbed Separated Boundary Layers. Journal of Turbomachinery, 2012, 134, .	0.9	8
108	Turbulent pipe flow: Statistics,Re-dependence, structures and similarities with channel and boundary layer flows. Journal of Physics: Conference Series, 2014, 506, 012010.	0.3	8

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109	Granger causality in wall-bounded turbulence. Journal of Physics: Conference Series, 2014, 506, 012006.	0.3	8
110	Approximate reconstruction of randomly sampled signals. Signal Processing, 1987, 12, 153-168.	2.1	7
111	A binary tree implementation of a parallel distributed tridiagonal solver. Parallel Computing, 1995, 21, 233-241.	1.3	7
112	The Role of Coherent Structure Interactions in the Regeneration of Wall Turbulence. Fluid Mechanics and Its Applications, 1998, , 155-158.	0.1	7
113	Intermittency in Turbulence. , 2006, , 144-151.		6
114	Dipoles and streams in two-dimensional turbulence. Journal of Fluid Mechanics, 2020, 904, .	1.4	6
115	An isolated logarithmic layer. Journal of Fluid Mechanics, 2021, 916, .	1.4	6
116	Time-resolved Evolution of the Wall-bounded Vorticity Cascade. Journal of Physics: Conference Series, 2011, 318, 062016.	0.3	5
117	Dynamics of Wall-Bounded Turbulence. , 0, , 221-268.		5
118	Hairpin vortices in turbulent boundary layers. Journal of Physics: Conference Series, 2014, 506, 012008.	0.3	5
119	Hot-film sensors calibration drift in water. Journal of Physics E: Scientific Instruments, 1981, 14, 569-572.	0.7	4
120	Scaling of velocity fluctuations in off-wall boundary conditions for turbulent flows. Journal of Physics: Conference Series, 2014, 506, 012002.	0.3	4
121	Unstable periodic orbits in plane Couette flow with the Smagorinsky model. Journal of Physics: Conference Series, 2016, 708, 012003.	0.3	4
122	Small Scale Vortices in Turbulent Flows. , 1993, , 95-110.		4
123	Interaction between near-wall streaks and large-scale motions in turbulent channel flows. Journal of Fluid Mechanics, 2022, 940, .	1.4	4
124	Stochastic self-energy subgrid model for the large eddy simulation of turbulent channel flows. Journal of Physics: Conference Series, 2014, 506, 012001.	0.3	3
125	The minimal channel: a fast and direct method for characterising roughness. Journal of Physics: Conference Series, 2016, 708, 012010.	0.3	3
126	Coherent Structures in Wall-Bounded Turbulence. ERCOFTAC Series, 2016, , 37-46.	0.1	3

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127	Description and detection of burst events in turbulent flows. Journal of Physics: Conference Series, 2018, 1001, 012015.	0.3	3
128	Shear layer models and computer analysis of data. , 1981, , 41-61.		3
129	Hybrid OpenMP-MPI Turbulent Boundary Layer Code Over 32k Cores. Lecture Notes in Computer Science, 2011, , 218-227.	1.0	3
130	A POD-based analysis of turbulence in the reduced nonlinear dynamics system. Journal of Physics: Conference Series, 2016, 708, 012002.	0.3	2
131	Editorial opinion: public dissemination of raw turbulence data. Journal of Physics: Conference Series, 2016, 708, 011002.	0.3	2
132	Towards the Direct Numerical Simulation of a Self-similar Adverse Pressure Gradient Turbulent Boundary Layer Flow. , 2017, , 61-75.		2
133	Reynolds stress structures in a self-similar adverse pressure gradient turbulent boundary layer at the verge of separation.. Journal of Physics: Conference Series, 2018, 1001, 012001.	0.3	2
134	Bifurcation structure of unstable periodic orbits in plane Couette flow with the Smagorinsky model. Physical Review Fluids, 2021, 6, .	1.0	2
135	CLUSTERING OF INTENSE STRUCTURES IN ISOTROPIC TURBULENCE: NUMERICAL AND EXPERIMENTAL EVIDENCE. Fluid Mechanics and Its Applications, 2006, , 3-12.	0.1	2
136	THE NEAR-WALL STRUCTURES OF TURBULENT WALL FLOWS. , 2006, , 53-70.		2
137	Self-Similarity and Coherence in the Turbulent Cascade. Fluid Mechanics and Its Applications, 2001, , 57-66.	0.1	2
138	A low-storage method consistent with second-order statistics for time-resolved databases of turbulent channel flow up to Reï„=5300. Journal of Computational Science, 2021, 56, 101476.	1.5	2
139	The attached reverse and detached forward cascades in wall-turbulent flows. Journal of Physics: Conference Series, 2014, 506, 012005.	0.3	1
140	Homogeneous shear turbulence â€“ bypass concept via interplay of linear transient growth and nonlinear transverse cascade. Journal of Physics: Conference Series, 2016, 708, 012001.	0.3	1
141	Third Madrid Summer School on Turbulence. Journal of Physics: Conference Series, 2018, 1001, 011001.	0.3	1
142	Intense structures of different momentum fluxes in turbulent channels. Journal of Physics: Conference Series, 2018, 1001, 012003.	0.3	1
143	Effect of limited near-wall inlet data on the direct numerical simulation of turbulent channel flow. Journal of Physics: Conference Series, 2020, 1522, 012019.	0.3	1
144	Collective organization and screening in two-dimensional turbulence. Physical Review Fluids, 2021, 6, .	1.0	1

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145	Wall turbulence without walls. Springer Proceedings in Physics, 2009, , 597-600.	0.1	1
146	Statistical Properties of Decaying Two-Dimensional Turbulence. Fluid Mechanics and Its Applications, 1995, , 11-15.	0.1	1
147	COMPUTING HIGH-REYNOLDS NUMBER CHANNELS: WILL DNS EVER SUBSTITUTE EXPERIMENTS?. , 2002, , 17-27.		1
148	Preface by Javier JimÃ©nez and the Editors. Annual Review of Fluid Mechanics, 2004, 36, .	10.8	1
149	Linear instability and resonance effects in large-scale opposition flow control. Journal of Fluid Mechanics, 2022, 935, .	1.4	1
150	Solitary waves on a vorticity layer. Journal of Fluid Mechanics, 1994, 264, 303-319.	1.4	0
151	What do we need to substitute experiments with simulations in turbulence?. , 1996, , 1-8.		0
152	The Largest Scales in Turbulent Flow: The Structures of the Wall Layer. Lecture Notes in Physics, 2001, , 39-57.	0.3	0
153	Inner-Outer Interactions in Wall-Bounded Turbulence. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 3-14.	0.2	0
154	Corrections to Taylorâ€™s Approximation fromÂComputed Turbulent Convection Velocities. ERCOFTAC Series, 2011, , 211-218.	0.1	0
155	Scaling of pressure spectrum in turbulent boundary layers. Journal of Physics: Conference Series, 2014, 506, 012011.	0.3	0
156	Possible modification of the large-scale flow structures by vortical structural interactions. Journal of Physics: Conference Series, 2014, 506, 012012.	0.3	0
157	Numerical issues in Lagrangian tracking and topological evolution of fluid particles in wall-bounded turbulent flows. Journal of Physics: Conference Series, 2014, 506, 012003.	0.3	0
158	Influence of solid boundary conditions on the evolution of free and wall-bounded turbulent flows. Journal of Physics: Conference Series, 2014, 506, 012014.	0.3	0
159	Linearised Structures in Shear Turbulence. Procedia IUTAM, 2015, 14, 122-128.	1.2	0
160	Second Multiflow Summer School on Turbulence. Journal of Physics: Conference Series, 2016, 708, 011001.	0.3	0
161	A Marker for Studying the Turbulent Energy Cascade in Real Space. Springer Proceedings in Physics, 2016, , 27-31.	0.1	0
162	The Turbulence Cascade in Physical Space. ERCOFTAC Series, 2019, , 45-50.	0.1	0

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163	Very Large Anisotropic Scales in Turbulent Wall-Bounded Flows. , 2003, , 105-112.		0
164	The Near-Wall Structures of the Turbulent Boundary Layer. Solid Mechanics and Its Applications, 2006, , 209-220.	0.1	0
165	Some Contributions and Challenges of Computational Turbulence Research. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2008, , 3-10.	0.1	0
166	The Role of Computation in Transition Research. , 1991, , 170-181.		0
167	A Preliminary Study on the Formation of Elongated Vortices in Turbulence. Fluid Mechanics and Its Applications, 1995, , 519-523.	0.1	0
168	On the Generation of Intermittent Gradients in a Deterministically Forced Burgersâ€™ Equation. Fluid Mechanics and Its Applications, 1998, , 223-226.	0.1	0
169	Dynamics of the Structures of Near Wall Turbulence. Fluid Mechanics and Its Applications, 1999, , 41-49.	0.1	0
170	Coherent dynamics in wall turbulence. , 2002, , 229-240.		0