Sergei Chernyshenko

List of Publications by Year
in descending order

62	940	471509 17	454955 30
papers	citations	h-index	g-index

63	63	63	614
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Estimating wall-shear-stress fluctuations given an outer region input. Journal of Fluid Mechanics, 2013, 715, 163-180.	3.4	123
2	The mechanism of streak formation in near-wall turbulence. Journal of Fluid Mechanics, 2005, 544, 99.	3.4	98
3	Quasisteady quasihomogeneous description of the scale interactions in near-wall turbulence. Physical Review Fluids, 2016, 1, .	2.5	56
4	Polynomial sum of squares in fluid dynamics: a review with a look ahead. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130350.	3.4	45
5	Bounds for Deterministic and Stochastic Dynamical Systems using Sum-of-Squares Optimization. SIAM Journal on Applied Dynamical Systems, 2016, 15, 1962-1988.	1.6	45
6	Global stability analysis of fluid flows using sum-of-squares. Physica D: Nonlinear Phenomena, 2012, 241, 692-704.	2.8	42
7	High-Reynolds-number Batchelor-model asymptotics of a flow past an aerofoil with a vortex trapped in a cavity. Journal of Fluid Mechanics, 1998, 358, 283-297.	3.4	41
8	Can large-scale oblique undulations on a solid wall reduce the turbulent drag?. Physics of Fluids, 2017, 29, .	4.0	36
9	Pattern prediction by linear analysis of turbulent flow with drag reduction by wall oscillation. Journal of Fluid Mechanics, 2013, 724, 607-641.	3.4	31
10	A posteriori regularity of the three-dimensional Navierâ€“Stokes equations from numerical computations. Journal of Mathematical Physics, 2007, 48, 065204.	1.1	30
11	The asymptotic form of the stationary separated circumfluence of a body at high reynolds numbers. Prikladnaya Matematika I Mekhanika, 1988, 52, 746-753.	0.4	28
12	Modelling turbulent skin-friction control using linearized Navierâ€“Stokes equations. Journal of Fluid Mechanics, 2012, 702, 403-414.	3.4	28
13	Turbulent flow and heat transfer in eccentric annulus. Journal of Fluid Mechanics, 2009, 638, 95-116.	3.4	27
14	Stabilization of trapped vortices by alternating blowing suction. Physics of Fluids, 1995, 7, 802-807.	4.0	26
15	Flow Models for a Vortex Cell. AIAA Journal, 2009, 47, 451-467.	2.6	24
16	Asymptotic Theory of Global Separation. Applied Mechanics Reviews, 1998, 51, 523-536.	10.1	23
17	Trapped vortices and a favourable pressure gradient. Journal of Fluid Mechanics, 2003, 482, 235-255.	3.4	20
18	High-Reynolds-number asymptotics of the steady flow through a row of bluff bodies. Journal of Fluid Mechanics, 1993, 257, 421.	3.4	17

#	Article	IF	Citations
19	Stratified Sadovskii flow in a channel. Journal of Fluid Mechanics, 1993, 250, 423-431.	3.4	16
20	Inviscid Batchelor-model flow past an airfoil with a vortex trapped in a cavity. Journal of Fluid Mechanics, 1996, 323, 367-376.	3.4	14
21	Streaks and vortices in near-wall turbulence. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2005, 363, 1097-1107.	3.4	14
22	High-Reynolds-number weakly stratified flow past an obstacle. Journal of Fluid Mechanics, 1996, 317, 155-178.	3.4	12
23	Finding Extremal Periodic Orbits with Polynomial Optimization, with Application to a Nine-Mode Model of Shear Flow. SIAM Journal on Applied Dynamical Systems, 2020, 19, 763-787.	1.6	12
24	Sum-of-squares of polynomials approach to nonlinear stability of fluid flows: an example of application. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150622.	2.1	11
25	Orr mechanism in transition of parallel shear flow. Physical Review Fluids, 2021, 6, .	2.5	10
26	Sum-of-squares approach to feedback control of laminar wake flows. Journal of Fluid Mechanics, 2016, 809, 628-663.	3.4	9
27	Extension of QSQH theory of scale interaction in near-wall turbulence to all velocity components. Journal of Fluid Mechanics, 2021, 916, .	3.4	9
28	Global Stability of Fluid Flows Despite Transient Growth of Energy. Physical Review Letters, 2022, 128, .	7.8	8
29	An approximate method of determining the vorticity in the separation region as the viscosity tends to zero. Fluid Dynamics, 1982, 17, 7-12.	0.9	7
30	Vortex pair and Chaplygin cusps. European Journal of Mechanics, B/Fluids, 2005, 24, 328-337.	2.5	6
31	Turbulent drag reduction by spanwise oscillations of a ribbed surface. Fluid Dynamics, 2013, 48, 461-470.	0.9	6
32	Separated flow over a backward-facing step whose height is much greater than the thickness of the lower sublayer of the interaction zone. Fluid Dynamics, 1992, 26, 496-501.	0.9	5
33	Regeneration mechanism of streaks in near-wall quasi-2D turbulence. European Journal of Mechanics, B/Fluids, 2004, 23, 727-736.	2.5	5
34	Analysis of data on the relation between eddies and streaky structures in turbulent flows using the placebo method. Fluid Dynamics, 2006, 41, 772-783.	0.9	5
35	A large-scale filter for applications of QSQH theory of scale interactions in near-wall turbulence. Fluid Dynamics Research, 2019, 51, 011406.	1.3	5
36	A driving mechanism of near-wall turbulence subject to adverse pressure gradient in a plane Couette flow. Journal of Fluid Mechanics, 2022, 941, .	3.4	5

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37	Calculation of low-viscosity flows with separation by means of Batchelor's model. Fluid Dynamics, 1984, 19, 206-211.	0.9	3
38	On the uniqueness of steady flow past a rotating cylinder with suction. Journal of Fluid Mechanics, 2000, 411, 213-232.	3.4	3
39	Internal Degrees of Freedom of an Actuator Disc Model. Journal of Propulsion and Power, 2004, 20, 155-163.	2.2	3
40	Fast numerical evaluation of flow fields with vortex cells. European Journal of Mechanics, B/Fluids, 2009, 28, 660-669.	2.5	3
41	Large-Scale Vortex Generation Modeling. Journal of Fluids Engineering, Transactions of the ASME, 2011, 133, .	1.5	3
42	Flow regimes in a simplified Taylorâ€“Couette-type flow model. European Journal of Mechanics, B/Fluids, 2016, 57, 176-191.	2.5	3
43	Expensive Control of Long-Time Averages Using Sum of Squares and Its Application to A Laminar Wake Flow. IEEE Transactions on Control Systems Technology, 2017, 25, 2073-2086.	5.2	3
44	Finding unstable periodic orbits: A hybrid approach with polynomial optimization. Physica D: Nonlinear Phenomena, 2021, 427, 133009.	2.8	3
45	Relationship between the methods of bounding time averages. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210044.	3.4	3
46	Asymptotics of steady axisymmetric flow of incompressible fluid past a bluff body at high Reynolds number. Fluid Dynamics, 1995, 30, 28-34.	0.9	2
47	Large-Scale Source Term Modeling of Vortex Generation. , 2009, , .		2
48	Stability analysis of fluid flows using sum-of-squares. , 2010, , .		2
49	Tikhonov regularisation in discrete vortex methods. Computers and Fluids, 2005, 34, 275-281.	2.5	1
50	Extension of the Prandtlâ€“Batchelor theorem to three-dimensional flows slowly varying in one direction. Journal of Fluid Mechanics, 2010, 654, 351-361.	3.4	1
51	Identification of a laminar-turbulent interface in partially turbulent flow. Fluid Dynamics, 2011, 46, 911-916.	0.9	1
52	Nonlinear stability analysis of fluid flow using sum of squares of polynomials. , 2013, , .		1
53	Low-order state-feedback controller design for long-time average cost control of fluid flow systems: A sum-of-squares approach. , 2015, , .		1
54	Long-time average cost control of polynomial systems: A sum of squares approach. , 2015, , .		1

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55	Controlling fluid flows with positive polynomials. , 2016, , .		1
56	Turbulent flow and heat transfer in eccentric annulus. Springer Proceedings in Physics, 2009, , 601-604.	0.2	1
57	Asymptotic behavior of high-Reynolds-number flow through an array of blunt bodies. Russian Physics Journal, 1993, 36, 308-325.	0.4	0
58	Density-stratified Sadovskii flow in a channel. Fluid Dynamics, 1993, 28, 524-528.	0.9	0
59	Modelling turbulent skin-friction control using linearised Navier-Stokes equations. Journal of Physics: Conference Series, 2011, 318, 042026.	0.4	0
60	Long-time average cost control of stochastic systems using sum of squares of polynomials. , 2015, , .		0
61	Asymptotic Theory of the Stationary Flow Around Bluff Bodies. , 1991, , 121-124.		0
62	Long-Time Average Cost Control of Polynomial Systems: A Sum-of-Squares-Based Small-Feedback Approach. , 2015, , .		0