Sergei Chernyshenko

List of Publications by Year
in descending order

62 papers	940 citations	471509 17 h-index	454955 30 g-index
63 all docs	63 docs citations	63 times ranked	614 citing authors

#	Article	IF	Citations
1	Relationship between the methods of bounding time averages. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210044.	3.4	3
2	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
3	Global Stability of Fluid Flows Despite Transient Growth of Energy. Physical Review Letters, 2022, 128, .	7.8	8
4	Orr mechanism in transition of parallel shear flow. Physical Review Fluids, 2021, 6, .	2.5	10
5	Extension of QSQH theory of scale interaction in near-wall turbulence to all velocity components. Journal of Fluid Mechanics, 2021, 916, .	3.4	9
6	Finding unstable periodic orbits: A hybrid approach with polynomial optimization. Physica D: Nonlinear Phenomena, 2021, 427, 133009.	2.8	3
7	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
8	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
9	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
10	Can large-scale oblique undulations on a solid wall reduce the turbulent drag?. Physics of Fluids, 2017, 29, .	4.0	36
11	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
12	Controlling fluid flows with positive polynomials. , 2016, , .		1
13	Sum-of-squares approach to feedback control of laminar wake flows. Journal of Fluid Mechanics, 2016, 809, 628-663.	3.4	9
14	Flow regimes in a simplified Taylorâ€“Couette-type flow model. European Journal of Mechanics, B/Fluids, 2016, 57, 176-191.	2.5	3
15	Quasisteady quasihomogeneous description of the scale interactions in near-wall turbulence. Physical Review Fluids, 2016, 1, .	2.5	56
16	Low-order state-feedback controller design for long-time average cost control of fluid flow systems: A sum-of-squares approach. , 2015, , .		1
17	Long-time average cost control of polynomial systems: A sum of squares approach. , 2015, , .		1
18	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

#	Article	IF	Citations
19	Long-time average cost control of stochastic systems using sum of squares of polynomials. , 2015, , .		0
20	Long-Time Average Cost Control of Polynomial Systems: A Sum-of-Squares-Based Small-Feedback Approach. , 2015, , .		0
21	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
22	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
23	Turbulent drag reduction by spanwise oscillations of a ribbed surface. Fluid Dynamics, 2013, 48, 461-470.	0.9	6
24	Estimating wall-shear-stress fluctuations given an outer region input. Journal of Fluid Mechanics, 2013, 715, 163-180.	3.4	123
25	Nonlinear stability analysis of fluid flow using sum of squares of polynomials. , 2013, , .		1
26	Modelling turbulent skin-friction control using linearized Navierâ€"Stokes equations. Journal of Fluid Mechanics, 2012, 702, 403-414.	3.4	28
27	Global stability analysis of fluid flows using sum-of-squares. Physica D: Nonlinear Phenomena, 2012, 241, 692-704.	2.8	42
28	Modelling turbulent skin-friction control using linearised Navier-Stokes equations. Journal of Physics: Conference Series, 2011, 318, 042026.	0.4	0
29	Identification of a laminar-turbulent interface in partially turbulent flow. Fluid Dynamics, 2011, 46, 911-916.	0.9	1
30	Large-Scale Vortex Generation Modeling. Journal of Fluids Engineering, Transactions of the ASME, 2011, 133, .	1.5	3
31	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
32	Stability analysis of fluid flows using sum-of-squares. , 2010, , .		2
33	Flow Models for a Vortex Cell. AIAA Journal, 2009, 47, 451-467.	2.6	24
34	Fast numerical evaluation of flow fields with vortex cells. European Journal of Mechanics, B/Fluids, 2009, 28, 660-669.	2.5	3
35	Large-Scale Source Term Modeling of Vortex Generation. , 2009, , .		2
36	Turbulent flow and heat transfer in eccentric annulus. Journal of Fluid Mechanics, 2009, 638, 95-116.	3.4	27

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37	Turbulent flow and heat transfer in eccentric annulus. Springer Proceedings in Physics, 2009, , 601-604.	0.2	1
38	A posteriori regularity of the three-dimensional Navierâ€“Stokes equations from numerical computations. Journal of Mathematical Physics, 2007, 48, 065204.	1.1	30
39	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
40	Streaks and vortices in near-wall turbulence. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2005, 363, 1097-1107.	3.4	14
41	Vortex pair and Chaplygin cusps. European Journal of Mechanics, B/Fluids, 2005, 24, 328-337.	2.5	6
42	Tikhonov regularisation in discrete vortex methods. Computers and Fluids, 2005, 34, 275-281.	2.5	1
43	The mechanism of streak formation in near-wall turbulence. Journal of Fluid Mechanics, 2005, 544, 99.	3.4	98
44	Internal Degrees of Freedom of an Actuator Disc Model. Journal of Propulsion and Power, 2004, 20, 155-163.	2.2	3
45	Regeneration mechanism of streaks in near-wall quasi-2D turbulence. European Journal of Mechanics, B/Fluids, 2004, 23, 727-736.	2.5	5
46	Trapped vortices and a favourable pressure gradient. Journal of Fluid Mechanics, 2003, 482, 235-255.	3.4	20
47	On the uniqueness of steady flow past a rotating cylinder with suction. Journal of Fluid Mechanics, 2000, 411, 213-232.	3.4	3
48	Asymptotic Theory of Global Separation. Applied Mechanics Reviews, 1998, 51, 523-536.	10.1	23
49	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
50	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
51	High-Reynolds-number weakly stratified flow past an obstacle. Journal of Fluid Mechanics, 1996, 317, 155-178.	3.4	12
52	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
53	Stabilization of trapped vortices by alternating blowing suction. Physics of Fluids, 1995, 7, 802-807.	4.0	26
54	Asymptotic behavior of high-Reynolds-number flow through an array of blunt bodies. Russian Physics Journal, 1993, 36, 308-325.	0.4	0

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55	Density-stratified Sadovskii flow in a channel. Fluid Dynamics, 1993, 28, 524-528.	0.9	0
56	High-Reynolds-number asymptotics of the steady flow through a row of bluff bodies. Journal of Fluid Mechanics, 1993, 257, 421.	3.4	17
57	Stratified Sadovskii flow in a channel. Journal of Fluid Mechanics, 1993, 250, 423-431.	3.4	16
58	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
59	Asymptotic Theory of the Stationary Flow Around Bluff Bodies. , 1991, , 121-124.		0
60	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
61	Calculation of low-viscosity flows with separation by means of Batchelor's model. Fluid Dynamics, 1984, 19, 206-211.	0.9	3
62	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