Bartosz Protas

List of Publications by Year in descending order

Source: https://exaly.com/author-pdf/9065117/publications.pdf

Version: 2024-02-01

66	982	430874	477307
papers	citations	18 h-index	29 g-index

66	66	66	793
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Accurate Characterization of Ion Transport Properties in Binary Symmetric Electrolytes Using In Situ NMR Imaging and Inverse Modeling. Journal of Physical Chemistry B, 2015, 119, 12238-12248.	2.6	71
2	Optimal rotary control of the cylinder wake in the laminar regime. Physics of Fluids, 2002, 14, 2073.	4.0	66
3	A computational framework for the regularization of adjoint analysis in multiscale PDE systems. Journal of Computational Physics, 2004, 195, 49-89.	3.8	65
4	Three-dimensional investigation of cycling-induced microstructural changes in lithium-ion battery cathodes using focused ion beam/scanning electron microscopy. Journal of Power Sources, 2016, 306, 300-308.	7.8	60
5	Skin friction and pressure: the â€œfootprintsâ€•of turbulence. Physica D: Nonlinear Phenomena, 2004, 196, 28-44.	2.8	59
6	Linear feedback stabilization of laminar vortex shedding based on a point vortex model. Physics of Fluids, 2004, 16, 4473-4488.	4.0	58
7	Causes of binder damage in porous battery electrodes and strategies to prevent it. Journal of Power Sources, 2017, 350, 140-151.	7.8	49
8	Optimal nonlinear eddy viscosity in Galerkin models of turbulent flows. Journal of Fluid Mechanics, 2015, 766, 337-367.	3.4	45
9	Vortex dynamics models in flow control problems. Nonlinearity, 2008, 21, R203-R250.	1.4	35
10	Computation of Ground States of the Gross--Pitaevskii Functional via Riemannian Optimization. SIAM Journal of Scientific Computing, 2017, 39, B1102-B1129.	2.8	31
11	Effective Transport Properties of Porous Electrochemical Materials â€” A Homogenization Approach. Journal of the Electrochemical Society, 2014, 161, E3066-E3077.	2.9	25
12	Controlling the dual cascade of two-dimensional turbulence. Journal of Fluid Mechanics, 2011, 668, 202-222.	3.4	24
13	On optimal reconstruction of constitutive relations. Physica D: Nonlinear Phenomena, 2011, 240, 1228-1244.	2.8	22
14	An Effective Approach to Computation of Forces in Viscous Incompressible Flows. Journal of Computational Physics, 2000, 159, 231-245.	3.8	21
15	Adjoint-based optimization of PDE systems with alternative gradients. Journal of Computational Physics, 2008, 227, 6490-6510.	3.8	21
16	Adjoint-based optimization of thermo-fluid phenomena in welding processes. Journal of Engineering Mathematics, 2009, 65, 201-220.	1.2	19
17	On maximum enstrophy growth in a hydrodynamic system. Physica D: Nonlinear Phenomena, 2011, 240, 1553-1563.	2.8	19
18	On continuation of inviscid vortex patches. Physica D: Nonlinear Phenomena, 2010, 239, 190-201.	2.8	18

#	Article	IF	Citations
19	Optimal reconstruction of material properties in complex multiphysics phenomena. Journal of Computational Physics, 2013, 242, 889-914.	3.8	18
20	Maximum palinstrophy growth in 2D incompressible flows. Journal of Fluid Mechanics, 2014, 742, 340-367.	3.4	18
21	Incorporating Dendrite Growth into Continuum Models of Electrolytes: Insights from NMR Measurements and Inverse Modeling. Journal of the Electrochemical Society, 2019, 166, A1591-A1602.	2.9	17
22	The Effect of Ionic Aggregates on the Transport of Charged Species in Lithium Electrolyte Solutions. Journal of the Electrochemical Society, 2018, 165, H561-H567.	2.9	15
23	Bayesian uncertainty quantification in inverse modeling of electrochemical systems. Journal of Computational Chemistry, 2019, 40, 740-752.	3.3	15
24	Extreme vortex states and the growth of enstrophy in three-dimensional incompressible flows. Journal of Fluid Mechanics, 2017, 818, 772-806.	3.4	14
25	Adjoint-based optimization of PDEs in moving domains. Journal of Computational Physics, 2008, 227, 2707-2723.	3.8	13
26	Center manifold analysis of a point vortex model of vortex shedding with control. Physica D: Nonlinear Phenomena, 2007, 228, 179-187.	2.8	10
27	Homogenization Study of the Effects of Cycling on the Electronic Conductivity of Commercial Lithium-Ion Battery Cathodes. Journal of Physical Chemistry C, 2015, 119, 12199-12208.	3.1	10
28	An inverse model for a free-boundary problem with a contact line: Steady case. Journal of Computational Physics, 2009, 228, 4893-4910.	3.8	9
29	Vortices, maximum growth and the problem of finite-time singularity formation. Fluid Dynamics Research, 2014, 46, 031404.	1.3	9
30	Maximum amplification of enstrophy in three-dimensional Navierâ€“Stokes flows. Journal of Fluid Mechanics, 2020, 893, .	3.4	9
31	A Mathematical Model for Mechanically-Induced Deterioration of the Binder in Lithium-Ion Electrodes. SIAM Journal on Applied Mathematics, 2017, 77, 2172-2198.	1.8	8
32	Higher-order FÃ¶ppl models of steady wake flows. Physics of Fluids, 2006, 18, 117109.	4.0	7
33	On Oseen flows for large Reynolds numbers. Theoretical and Computational Fluid Dynamics, 2013, 27, 665-680.	2.2	7
34	Linear stability of Hillâ€™s vortex to axisymmetricÂperturbations. Journal of Fluid Mechanics, 2016, 799, 579-602.	3.4	7
35	On calculation of hydrodynamic forces for steady flows in unbounded domains. Journal of Fluids and Structures, 2011, 27, 1455-1460.	3.4	6
36	An Optimal Model Identification for Oscillatory Dynamics with a Stable Limit Cycle. Journal of Nonlinear Science, 2014, 24, 245-275.	2.1	6

#	Article	IF	Citations
37	Maximum Rate of Growth of Enstrophy in Solutions of the Fractional Burgers Equation. Journal of Nonlinear Science, 2018, 28, 395-422.	2.1	6
38	Discerning models of phase transformations in porous graphite electrodes: Insights from inverse modelling based on MRI measurements. Electrochimica Acta, 2020, 349, 136290.	5.2	6
39	Wake effects on drift in two-dimensional inviscid incompressible flows. Physics of Fluids, 2014, 26, 123601.	4.0	5
40	On the convergence of data assimilation for the one-dimensional shallow water equations with sparse observations. Advances in Computational Mathematics, 2019, 45, 3195-3216.	1.6	5
41	Rotating equilibria of vortex sheets. Physica D: Nonlinear Phenomena, 2020, 403, 132286.	2.8	5
42	On Uncertainty Quantification in the Parametrization of Newman-Type Models of Lithium-Ion Batteries. Journal of the Electrochemical Society, 0, , .	2.9	5
43	Optimal reconstruction of inviscid vortices. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150323.	2.1	4
44	Linear feedback stabilization of point-vortex equilibria near a Kasper wing. Journal of Fluid Mechanics, 2017, 827, 121-154.	3.4	4
45	Transient growth in stochastic Burgers flows. Discrete and Continuous Dynamical Systems - Series B, 2018, 23, 2371-2391.	0.9	4
46	Systematic search for extreme and singular behaviour in some fundamental models of fluid mechanics. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210035.	3.4	4
47	On an attempt to simplify the Quartapelleâ€“Napolitano approach to computation of hydrodynamic forces in open flows. Journal of Fluids and Structures, 2007, 23, 1207-1214.	3.4	3
48	A Method for Geometry Optimization in a Simple Model of Two-Dimensional Heat Transfer. SIAM Journal of Scientific Computing, 2013, 35, B1105-B1131.	2.8	3
49	A framework for linear stability analysis of finite-area vortices. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120709.	2.1	3
50	Drift due to two obstacles in different arrangements. Theoretical and Computational Fluid Dynamics, 2016, 30, 529-542.	2.2	3
51	Linear stability of inviscid vortex rings to axisymmetric perturbations. Journal of Fluid Mechanics, 2019, 874, 1115-1146.	3.4	3
52	Vortex design problem. Journal of Computational and Applied Mathematics, 2012, 236, 1926-1946.	2.0	2
53	Application of scaled nonlinear conjugate-gradient algorithms to the inverse natural convection problem. Optimization Methods and Software, 2013, 28, 159-185.	2.4	2
54	Harnessing the Kelvinâ€“Helmholtz instability: feedback stabilization of an inviscid vortex sheet. Journal of Fluid Mechanics, 2018, 852, 146-177.	3.4	2

#	Article	IF	Citations
55	Optimal Closures in a Simple Model for Turbulent Flows. SIAM Journal of Scientific Computing, 2020, 42, B250-B272.	2.8	2
56	Computation of effective free surfaces in two phase flows. Physics of Fluids, 2012, 24, 087101.	4.0	1
57	Computation of steady incompressible flows in unbounded domains. Computers and Fluids, 2015, 112, 94-107.	2.5	1
58	Finite rotating and translating vortex sheets. Journal of Fluid Mechanics, 2021, 923, .	3.4	1
59	Vortex Models for Feedback Stabilization of Wake Flows. , 2007, , 422-436.		1
60	Singularity formation in the deterministic and stochastic fractional Burgers equation. Physica D: Nonlinear Phenomena, 2022, , 133432.	2.8	1
61	Stability of confined vortex sheets. Theoretical and Computational Fluid Dynamics, 2021, 35, 109-118.	2.2	0
62	Nonlinear Preconditioning in Problems of Optimal Control for Fluid Systems. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2009, , 351-368.	0.6	0
63	Application of a variational approach to the computation of forces around a wing. Experiments in Fluids, 2022, 63, 1.	2.4	0
64	Editorial: Mathematical problems in physical fluid dynamics: part I. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210056.	3.4	0
65	Optimal eddy viscosity in closure models for two-dimensional turbulent flows. Physical Review Fluids, 2022, 7, .	2.5	0
66	Editorial: Mathematical problems in physical fluid dynamics: part II. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210057.	3.4	0