Johan Meyers

List of Publications by Year
in descending order

132 papers	4,040 citations	147566 31 h-index	128067 60 g-index
151 all docs	151 docs citations	151 times ranked	1895 citing authors

#	Article	IF	Citations
1	Large eddy simulation study of fully developed wind-turbine array boundary layers. Physics of Fluids, 2010, 22, .	1.6	622
2	Optimal turbine spacing in fully developed wind farm boundary layers. Wind Energy, 2012, 15, 305-317.	1.9	271
3	Wake structure in actuator disk models of wind turbines in yaw under uniform inflow conditions. Journal of Renewable and Sustainable Energy, 2016, 8, .	0.8	183
4	Optimal control of energy extraction in wind-farm boundary layers. Journal of Fluid Mechanics, 2015, 768, 5-50.	1.4	159
5	Database analysis of errors in large-eddy simulation. Physics of Fluids, 2003, 15, 2740-2755.	1.6	148
6	Dynamic Strategies for Yaw and Induction Control of Wind Farms Based on Large-Eddy Simulation and Optimization. Energies, 2018, 11, 177.	1.6	104
7	On the model coefficients for the standard and the variational multi-scale Smagorinsky model. Journal of Fluid Mechanics, 2006, 569, 287.	1.4	96
8	Shifted periodic boundary conditions for simulations of wall-bounded turbulent flows. Physics of Fluids, 2016, 28, .	1.6	91
9	Sensitivity analysis of large-eddy simulations to subgrid-scale-model parametric uncertainty using polynomial chaos. Journal of Fluid Mechanics, 2007, 585, 255-279.	1.4	88
10	Boundary-layer development and gravity waves in conventionally neutral wind farms. Journal of Fluid Mechanics, 2017, 814, 95-130.	1.4	88
11	Is plane-channel flow a friendly case for the testing of large-eddy simulation subgrid-scale models?. Physics of Fluids, 2007, 19, 048105.	1.6	83
12	A control-oriented dynamic wind farm model: WFSim. Wind Energy Science, 2018, 3, 75-95.	1.2	79
13	Large eddy simulation of a large wind-turbine array in a conventionally neutral atmospheric boundary layer. Physics of Fluids, 2015, 27, .	1.6	75
14	Flow visualization using momentum and energy transport tubes and applications to turbulent flow in wind farms. Journal of Fluid Mechanics, 2013, 715, 335-358.	1.4	72
15	A computational error-assessment of central finite-volume discretizations in large-eddy simulation using a Smagorinsky model. Journal of Computational Physics, 2007, 227, 156-173.	1.9	71
16	Turbulent Inflow Precursor Method with Time-Varying Direction for Large-Eddy Simulations and Applications to Wind Farms. Boundary-Layer Meteorology, 2016, 159, 305-328.	1.2	69
17	Large Eddy Simulations of Large Wind-Turbine Arrays in the Atmospheric Boundary Layer. , 2010, , .		67
18	Towards practical dynamic induction control of wind farms: analysis of optimally controlled wind-farm boundary layers and sinusoidal induction control of first-row turbines. Wind Energy Science, 2018, 3, 409-425.	1.2	67

#	Article	IF	Citations
19	Modelâ€based receding horizon control of wind farms for secondary frequency regulation. Wind Energy, 2017, 20, 1261-1275.	1.9	66
20	Gravity Waves and Wind-Farm Efficiency in Neutral and Stable Conditions. Boundary-Layer Meteorology, 2018, 166, 269-299.	1.2	64
21	Measurement of unsteady loading and power output variability in a micro wind farm model in a wind tunnel. Experiments in Fluids, 2017, 58, 1.	1.1	60
22	A functional form for the energy spectrum parametrizing bottleneck and intermittency effects. Physics of Fluids, 2008, 20, .	1.6	59
23	An optimal control framework for dynamic induction control of wind farms and their interaction with the atmospheric boundary layer. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160100.	1.6	54
24	Comparison of four large-eddy simulation research codes and effects of model coefficient and inflow turbulence in actuator-line-based wind turbine modeling. Journal of Renewable and Sustainable Energy, 2018, 10, .	0.8	54
25	Influence of turbulent boundary conditions on RANS simulations of pollutant dispersion in mechanically ventilated enclosures with transitional slot Reynolds number. Building and Environment, 2013, 59, 397-407.	3.0	52
26	On the construction and use of linear low-dimensional ventilation models. Indoor Air, 2012, 22, 427-441.	2.0	48
27	Optimal model parameters for multi-objective large-eddy simulations. Physics of Fluids, 2006, 18, 095103.	1.6	47
28	Optimal Coordinated Control of Power Extraction in LES of a Wind Farm with Entrance Effects. Energies, 2016, 9, 29.	1.6	46
29	Validation of four LES and a vortex model against stereo-PIV measurements in the near wake of an actuator disc and a wind turbine. Renewable Energy, 2016, 94, 510-523.	4.3	44
30	Optimality of the dynamic procedure for large-eddy simulations. Physics of Fluids, 2005, 17, 045108.	1.6	43
31	CFD for model-based controller development. Building and Environment, 2004, 39, 621-633.	3.0	32
32	A constraint for the subgrid-scale stresses in the logarithmic region of high Reynolds number turbulent boundary layers: A solution to the log-layer mismatch problem. Physics of Fluids, 2013, 25, .	1.6	31
33	Wind farm power fluctuations and spatial sampling of turbulent boundary layers. Journal of Fluid Mechanics, 2017, 823, 329-344.	1.4	31
34	Evaluation of Smagorinsky variants in large-eddy simulations of wall-resolved plane channel flows. Physics of Fluids, 2007, 19, .	1.6	30
35	Sensitivity and feedback of wind-farm-induced gravity waves. Journal of Fluid Mechanics, 2019, 862, 990-1028.	1.4	30
36	Assessment of LES Quality Measures Using the Error Landscape Approach. ERCOFTAC Series, 2008, , 131-142.	0.1	30

#	Article	IF	Citations
37	Error-Landscape Assessment of Large-Eddy Simulations: A Review of the Methodology. Journal of Scientific Computing, 2011, 49, 65-77.	1.1	27
38	Power smoothing in large wind farms using optimal control of rotating kinetic energy reserves. Wind Energy, 2015, 18, 1777-1791.	1.9	25
39	Fast prediction of indoor pollutant dispersion based on reduced-order ventilation models. Building Simulation, 2015, 8, 415-420.	3.0	24
40	A new wakeâ€merging method for windâ€farm power prediction in the presence of heterogeneous background velocity fields. Wind Energy, 2022, 25, 237-259.	1.9	24
41	Sequential Quadratic Programming (SQP) for optimal control in direct numerical simulation of turbulent flow. Journal of Computational Physics, 2014, 256, 1-16.	1.9	23
42	Reconstruction of turbulent flow fields from lidar measurements using large-eddy simulation. Journal of Fluid Mechanics, 2021, 906, .	1.4	23
43	Optimal dynamic induction control of a pair of inline wind turbines. Physics of Fluids, 2018, 30, .	1.6	22
44	Expert Elicitation on Wind Farm Control. Journal of Physics: Conference Series, 2020, 1618, 022025.	0.3	21
45	Dynamic wake modeling and state estimation for improved model-based receding horizon control of wind farms. , 2017, , .		20
46	Combining CFD and data-based mechanistic (DBM) modelling approaches. Energy and Buildings, 2004, 36, 535-542.	3.1	18
47	Stable reduced-order models for pollutant dispersion in the built environment. Building and Environment, 2015, 92, 360-367.	3.0	17
48	Flow modeling in air-cooled electronic enclosures. , 0, , .		16
49	Asymptotic conditions for the use of linear ventilation models in the presence of buoyancy forces. Building Simulation, 2014, 7, 131-136.	3.0	16
50	On the interaction of very-large-scale motions in a neutral atmospheric boundary layer with a row of wind turbines. Journal of Fluid Mechanics, 2018, 841, 1040-1072.	1.4	16
51	Evaluation of a windâ€farm parametrization in a regional climate model using large eddy simulations. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 3152-3161.	1.0	15
52	Constrained optimization of turbulent mixing-layer evolution. Journal of Turbulence, 2009, 10, N18.	0.5	14
53	Periodic shadowing sensitivity analysis of chaotic systems. Journal of Computational Physics, 2019, 391, 119-141.	1.9	14
54	Turbulent boundary-layer flow over regular multiscale roughness. Journal of Fluid Mechanics, 2021, 917, .	1.4	14

#	Article	IF	Citations
55	Globally conservative high-order filters for large-eddy simulation and computational aero-acoustics. Computers and Fluids, 2011, 48, 150-162.	1.3	13
56	On the efficiency of gradient based optimization algorithms for DNS-based optimal control in a turbulent channel flow. Computers and Fluids, 2016, 125, 11-24.	1.3	13
57	Optimal dynamic induction and yaw control of wind farms: effects of turbine spacing and layout. Journal of Physics: Conference Series, 2018, 1037, 032015.	0.3	13
58	A Modular Control Architecture for Airborne Wind Energy Systems. , 2019, , .		13
59	Modelling mass transfer phenomena and quantification of ventilation performance in a full scale installation. Building and Environment, 2005, 40, 1583-1590.	3.0	12
60	Successive inverse polynomial interpolation to optimize Smagorinskyâ€™s model for large-eddy simulation of homogeneous turbulence. Physics of Fluids, 2006, 18, 118102.	1.6	12
61	Maximizing dissipation in a turbulent shear flow by optimal control of its initial state. Physics of Fluids, 2011, 23, 045105.	1.6	12
62	Effect of wind turbine response time on optimal dynamic induction control of wind farms. Journal of Physics: Conference Series, 2016, 753, 052007.	0.3	12
63	Wind farms providing secondary frequency regulation: Evaluating the performance of model-based receding horizon control. Journal of Physics: Conference Series, 2016, 753, 052012.	0.3	12
64	Effect of layout on asymptotic boundary layer regime in deep wind farms. Physical Review Fluids, 2018, 3, .	1.0	12
65	Wind farms providing secondary frequency regulation: evaluating the performance of model-based receding horizon control. Wind Energy Science, 2018, 3, 11-24.	1.2	12
66	Error-landscape-based multiobjective calibration of the Smagorinsky eddy-viscosity using high-Reynolds-number decaying turbulence data. Physics of Fluids, 2010, 22, .	1.6	11
67	Accounting for wind-direction fluctuations in Reynolds-averaged simulation of near-range atmospheric dispersion. Atmospheric Environment, 2013, 72, 142-150.	1.9	11
68	Annual impact of wind-farm gravity waves on the Belgianâ€“Dutch offshore wind-farm cluster. Journal of Physics: Conference Series, 2018, 1037, 072006.	0.3	11
69	Wake characteristics of pumping mode airborne wind energy systems. Journal of Physics: Conference Series, 2019, 1256, 012016.	0.3	11
70	On the Feasibility of Using Large-Eddy Simulations for Real-Time Turbulent-Flow Forecasting in the Atmospheric Boundary Layer. Boundary-Layer Meteorology, 2019, 171, 213-235.	1.2	11
71	Modification of vortex dynamics and transport properties of transitional axisymmetric jets using zero-net-mass-flux actuation. Physics of Fluids, 2014, 26, .	1.6	10
72	Set-point optimization in wind farms to mitigate effects of flow blockage induced by atmospheric gravity waves. Wind Energy Science, 2021, 6, 247-271.	1.2	10

#	Article	IF	Citations
73	Wind-farm layout optimisation using a hybrid Jensenâ€“LES approach. Wind Energy Science, 2016, 1, 311-325.	1.2	10
74	Determination of subfilter energy in large-eddy simulations. Journal of Turbulence, 2004, 5, .	0.5	9
75	Analysis of turbulent flow properties and energy fluxes in optimally controlled wind-farm boundary layers. Journal of Physics: Conference Series, 2014, 524, 012178.	0.3	9
76	Airborne Wind Energy: Airfoil-Airmass Interaction. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 5814-5819.	0.4	9
77	Multiscale aeroelastic simulations of large wind farms in the atmospheric boundary layer. Journal of Physics: Conference Series, 2016, 753, 082020.	0.3	9
78	On the decay of dispersive motions in the outer region of rough-wall boundary layers. Journal of Fluid Mechanics, 2019, 862, .	1.4	9
79	Modelling and control of heat transfer phenomena inside a ventilated air space. Energy and Buildings, 2005, 37, 777-786.	3.1	8
80	Optimal control of a transitional jet using a continuous adjoint method. Computers and Fluids, 2016, 126, 12-24.	1.3	8
81	Robust and Stable Periodic Flight of Power Generating Kite Systems in a Turbulent Wind Flow Field. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 140-145.	0.4	7
82	Dynamic dose assessment by Large Eddy Simulation of the near-range atmospheric dispersion. Journal of Radiological Protection, 2015, 35, 165-178.	0.6	7
83	Simulation of Large Wind Farms in the Conventionally Neutral Atmospheric Boundary Layer Using LES. ERCOFTAC Series, 2018, , 469-474.	0.1	7
84	Sensitivity analysis of initial condition parameters on the transitional temporal turbulent mixing layer. Journal of Turbulence, 2008, 9, N12.	0.5	6
85	Results of the GABLS3 diurnal-cycle benchmark for wind energy applications. Journal of Physics: Conference Series, 2017, 854, 012037.	0.3	6
86	Comparison study between wind turbine and power kite wakes. Journal of Physics: Conference Series, 2017, 854, 012019.	0.3	6
87	Multigrid optimization for DNS-based optimal control in turbulent channel flows. Journal of Computational Physics, 2018, 366, 14-32.	1.9	6
88	Comparing Meso-Micro Methodologies for Annual Wind Resource Assessment and Turbine Siting at Cabauw. Journal of Physics: Conference Series, 2018, 1037, 072030.	0.3	5
89	Coordinated pitch and torque control of wind farms for power tracking. , 2018, , .		5
90	Launch of the FarmConners Wind Farm Control benchmark for code comparison. Journal of Physics: Conference Series, 2020, 1618, 022040.	0.3	5

#	Article	IF	Citations
91	A parallel-in-time multiple shooting algorithm for large-scale PDE-constrained optimal control problems. Journal of Computational Physics, 2022, 452, 110926.	1.9	5
92	Large-eddy simulation of airborne wind energy farms. Wind Energy Science, 2022, 7, 1093-1135.	1.2	5
93	Effects of self-induced gravity waves on finite wind-farm operations using a large-eddy simulation framework. Journal of Physics: Conference Series, 2022, 2265, 022043.	0.3	5
94	Towards Accurate Flow and Acoustic Prediction Techniques for Cavity Flow Noise Applications. , 2005, , .		4
95	Aeroacoustic Noise Source Mechanisms in Simple Expansion Chambers. , 2006, , .		4
96	Optimal control of wind farm power extraction in large eddy simulations. , 2014, , .		4
97	A framework for optimization of turbulent wind-farm boundary layers and application to optimal control of wind-farm energy extraction. , 2016, , .		4
98	Measuring power output intermittency and unsteady loading in a micro wind farm model. , 2016, , .		4
99	Wind tunnel study of the power output spectrum in a micro wind farm. Journal of Physics: Conference Series, 2016, 753, 072002.	0.3	3
100	Large Eddy Simulation of a wind tunnel wind farm experiment with one hundred static turbine models. Journal of Physics: Conference Series, 2018, 1037, 062006.	0.3	3
101	A Fast-Converging Kernel Density Estimator for Dispersion in Horizontally Homogeneous Meteorological Conditions. Atmosphere, 2021, 12, 1343.	1.0	3
102	Stable channel flow with spanwise heterogeneous surface temperature. Journal of Fluid Mechanics, 2022, 933, .	1.4	3
103	Including realistic upper atmospheres in a wind-farm gravity-wave model. Wind Energy Science, 2022, 7, 1367-1382.	1.2	3
104	Numerical Simulation and Controller Development for Energy Transfer in Imperfectly Mixed Fluids. Indoor and Built Environment, 2005, 14, 371-380.	1.5	2
105	On the use of high-order finite-difference discretization for LES with double decomposition of the subgrid-scale stresses. International Journal for Numerical Methods in Fluids, 2008, 56, 383-400.	0.9	2
106	ACOUSTIC PERFORMANCE OF NONREFLECTING BOUNDARY CONDITIONS FOR A RANGE OF INCIDENT ANGLES. Journal of Computational Acoustics, 2008, 16, 11-29.	1.0	2
107	Reducing power gradients in large-scale wind farms by optimal active power control. , 2013, , .		2
108	Wind farm performance in conventionally neutral atmospheric boundary layers with varying inversion strengths. Journal of Physics: Conference Series, 2014, 524, 012114.	0.3	2

#	Article	IF	Citations
109	Effect of Inversion-Layer Height and Coriolis Forces on Developing Wind-Farm Boundary Layers. , 2016, , .		2
110	Parametrization of homogeneous forested areas and effect on simulated dose rates near a nuclear research reactor. Journal of Environmental Radioactivity, 2020, 225, 106445.	0.9	2
111	Effect of Ekman Layer on Windfarm Roughness and Displacement Height. ERCOFTAC Series, 2015, , 423-434.	0.1	2
112	Validation of an analytical optimization framework for wind farm wake steering applications. , 2022, , .		2
113	Secondary motions above a staggered multi-scale rough wall. Journal of Fluid Mechanics, 2022, 941, .	1.4	2
114	Tuning of an engineering wind farm model using measurements from Large Eddy Simulations. Journal of Physics: Conference Series, 2022, 2265, 022045.	0.3	2
115	Optimization of Long-Term Mixing in a Turbulent Mixing Layer. , 2010, , .		1
116	Smoothing turbulence-induced power fluctuations in large wind farms by optimal control of the rotating kinetic energy of the turbines. Journal of Physics: Conference Series, 2014, 524, 012187.	0.3	1
117	Numerical simulations of flow fields through conventionally controlled wind turbines & wind farms. Journal of Physics: Conference Series, 2014, 524, 012158.	0.3	1
118	Towards an adjoint based 4D-Var state estimation for turbulent flow. Journal of Physics: Conference Series, 2018, 1037, 072055.	0.3	1
119	Effect of conventionally neutral boundary layer height on turbine performance and wake mixing in offshore windfarms. Journal of Physics: Conference Series, 2020, 1618, 062049.	0.3	1
120	Uncertainty Modeling, Error Charts and Improvement of Subgrid Models. , 2008, , 37-44.		1
121	Bayesian based estimation of turbulent flow fields from lidar observations in a conventionally neutral atmospheric boundary layer. Journal of Physics: Conference Series, 2020, 1618, 032047.	0.3	1
122	Error-Landscape Assessment of LES Accuracy Using Experimental Data. ERCOFTAC Series, 2010, , 205-210.	0.1	1
123	Study of the energy convergence of the Karhunen-Loeve decomposition applied to the large-eddy simulation of a high-Reynolds-number pressure-driven boundary layer. Physical Review Fluids, 2020, 5, .	1.0	1
124	An Improved Blending Formulation for Wall-Modeled Large-Eddy Simulations. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2012, , 111-120.	0.2	0
125	CFD MODEL VALIDATION FOR A VENTILATED INSTALLATION. Acta Horticulturae, 2003, , 405-411.	0.1	0
126	Identification of Global Error Behavior in LES Using a Database Approach. ERCOFTAC Series, 2004, , 163-170.	0.1	0

#	Article	IF	Citations
127	A Framework to Assess the Quality and Robustness of LES Codes. , 2006, , .		0
128	Optimization of Turbulent Mixing Restricted by Linear and Nonlinear Constraints. ERCOFTAC Series, 2010, , 269-274.	0.1	0
129	Error-landscape assessment of large-eddy simulations: a review. ERCOFTAC Series, 2011, , 3-14.	0.1	0
130	10.1063/1.5038600.1. , 2018, , .		0
131	Multiple shooting for large-scale optimal control problems governed by the Navier-Stokes equations. AIP Conference Proceedings, 2022, , .	0.3	0
132	Impact of Initial Flow Parameters on a Temporal Mixing Layer Evolution. , 2006, , 625-632.		0