

Bettina Frohnapfel

List of Publications by Year in descending order

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87
papers

1,604
citations

257101

24
h-index

344852

36
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93
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93
docs citations

93
times ranked

1089
citing authors

#	ARTICLE	IF	CITATIONS
1	Turbulent flow over superhydrophobic surfaces with streamwise grooves. <i>Journal of Fluid Mechanics</i> , 2014, 747, 186-217.	1.4	88
2	The dielectric breakdown limit of silicone dielectric elastomer actuators. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	88
3	Toward a Universal Roughness Correlation. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2017, 139, .	0.8	86
4	Interpretation of the mechanism associated with turbulent drag reduction in terms of anisotropy invariants. <i>Journal of Fluid Mechanics</i> , 2007, 577, 457-466.	1.4	67
5	The instantaneous structure of secondary flows in turbulent boundary layers. <i>Journal of Fluid Mechanics</i> , 2019, 862, 845-870.	1.4	55
6	Direct numerical simulation of flow over dissimilar, randomly distributed roughness elements: A systematic study on the effect of surface morphology on turbulence. <i>Physical Review Fluids</i> , 2018, 3, .	1.0	49
7	A comparison of opposition control in turbulent boundary layer and turbulent channel flow. <i>Physics of Fluids</i> , 2015, 27, .	1.6	48
8	Rearrangement of secondary flow over spanwise heterogeneous roughness. <i>Journal of Fluid Mechanics</i> , 2020, 885, .	1.4	46
9	Experimental investigations of turbulent drag reduction by surface-embedded grooves. <i>Journal of Fluid Mechanics</i> , 2007, 590, 107-116.	1.4	45
10	Two-point similarity in the round jet. <i>Journal of Fluid Mechanics</i> , 2007, 577, 309-330.	1.4	44
11	Global effect of local skin friction drag reduction in spatially developing turbulent boundary layer. <i>Journal of Fluid Mechanics</i> , 2016, 805, 303-321.	1.4	43
12	A systematic study of turbulent heat transfer over rough walls. <i>International Journal of Heat and Mass Transfer</i> , 2018, 127, 1157-1168.	2.5	43
13	Money versus time: evaluation of flow control in terms of energy consumption and convenience. <i>Journal of Fluid Mechanics</i> , 2012, 700, 406-418.	1.4	41
14	On the Mechanism Responsible for Turbulent Drag Reduction by Dilute Addition of High Polymers: Theory, Experiments, Simulations, and Predictions. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2006, 128, 118-130.	0.8	39
15	Numerical and experimental investigation of texture shape and position in the macroscopic contact. <i>Tribology International</i> , 2018, 122, 46-57.	3.0	37
16	Aerodynamic Effects of Uniform Blowing and Suction on a NACA4412 Airfoil. <i>Flow, Turbulence and Combustion</i> , 2020, 105, 735-759.	1.4	35
17	Does the choice of the forcing term affect flow statistics in DNS of turbulent channel flow?. <i>European Journal of Mechanics, B/Fluids</i> , 2016, 55, 286-293.	1.2	34
18	Secondary flow and heat transfer in turbulent flow over streamwise ridges. <i>International Journal of Heat and Fluid Flow</i> , 2020, 81, 108518.	1.1	34

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19	DNS of momentum and heat transfer over rough surfaces based on realistic combustion chamber deposit geometries. <i>International Journal of Heat and Fluid Flow</i> , 2018, 69, 83-94.	1.1	33
20	Numerical investigation of flow through a triangular duct: The coexistence of laminar and turbulent flow. <i>International Journal of Heat and Fluid Flow</i> , 2013, 41, 27-33.	1.1	32
21	Secondary vortices over surfaces with spanwise varying drag. <i>Journal of Turbulence</i> , 2016, 17, 1142-1158.	0.5	30
22	Drop bouncing by micro-grooves. <i>International Journal of Heat and Fluid Flow</i> , 2018, 70, 271-278.	1.1	30
23	Numerical simulation of turbulent duct flows with constant power input. <i>Journal of Fluid Mechanics</i> , 2014, 750, 191-209.	1.4	26
24	Experimental assessment of spanwise-oscillating dielectric electroactive surfaces for turbulent drag reduction in an air channel flow. <i>Experiments in Fluids</i> , 2015, 56, 1.	1.1	26
25	Spreading and rebound dynamics of sub-millimetre urea-water-solution droplets impinging on substrates of varying wettability. <i>Applied Mathematical Modelling</i> , 2021, 95, 53-73.	2.2	26
26	Optimization of surface textures in hydrodynamic lubrication through the adjoint method. <i>Tribology International</i> , 2020, 148, 106352.	3.0	20
27	Bouncing drop impingement on heated hydrophobic surfaces. <i>International Journal of Heat and Mass Transfer</i> , 2021, 180, 121777.	2.5	20
28	Global energy fluxes in turbulent channels with flow control. <i>Journal of Fluid Mechanics</i> , 2018, 857, 345-373.	1.4	19
29	Heat transfer enhancement on the liquid side of an industrially designed flat-tube heat exchanger with passive inserts " Numerical investigation. <i>Applied Thermal Engineering</i> , 2017, 123, 573-583.	3.0	18
30	Heat transfer and pressure drop correlations for laminar flow in an in-line and staggered array of circular cylinders. <i>Numerical Heat Transfer; Part A: Applications</i> , 2019, 75, 1-20.	1.2	17
31	Investigation of Blowing and Suction for Turbulent Flow Control on Airfoils. <i>AIAA Journal</i> , 0, , 1-15.	1.5	17
32	Spectral enstrophy budget in a shear-less flow with turbulent/non-turbulent interface. <i>Physics of Fluids</i> , 2015, 27, .	1.6	16
33	A modified Parametric Forcing Approach for modelling of roughness. <i>International Journal of Heat and Fluid Flow</i> , 2018, 71, 200-209.	1.1	15
34	Direct Numerical Simulations of Bypass Transition over Distributed Roughness. <i>AIAA Journal</i> , 2020, 58, 702-711.	1.5	15
35	Objective barriers to the transport of dynamically active vector fields. <i>Journal of Fluid Mechanics</i> , 2020, 905, .	1.4	15
36	Do riblets exhibit fully rough behaviour?. <i>Experiments in Fluids</i> , 2020, 61, 1.	1.1	15

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37	Prediction of turbulence control for arbitrary periodic spanwise wall movement. <i>Physics of Fluids</i> , 2013, 25, .	1.6	14
38	Turbulent Duct Flow Controlled with Spanwise Wall Oscillations. <i>Flow, Turbulence and Combustion</i> , 2017, 99, 787-806.	1.4	12
39	The influence of thermal boundary conditions on turbulent forced convection pipe flow at two Prandtl numbers. <i>International Journal of Heat and Mass Transfer</i> , 2019, 144, 118601.	2.5	12
40	A Holistic View on Urea Injection for NOx Emission Control: Impingement, Re-atomization, and Deposit Formation. <i>Emission Control Science and Technology</i> , 2020, 6, 228-243.	0.8	12
41	Uniform blowing and suction applied to nonuniform adverse-pressure-gradient wing boundary layers. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	12
42	Investigation of a turbulent convective buoyant flow of sodium over a backward-facing step. <i>Heat and Mass Transfer</i> , 2018, 54, 2533-2543.	1.2	11
43	Coupled simulation of flow-induced viscous and elastic anisotropy of short-fiber reinforced composites. <i>Acta Mechanica</i> , 2021, 232, 2249-2268.	1.1	11
44	Asymptotic fiber orientation states of the quadratically closed Folgar-Tucker equation and a subsequent closure improvement. <i>Journal of Rheology</i> , 2021, 65, 999-1022.	1.3	11
45	Small scale dynamics of a shearless turbulent/non-turbulent interface in dilute polymer solutions. <i>Physics of Fluids</i> , 2017, 29, 075102.	1.6	10
46	Azimuthally inhomogeneous thermal boundary conditions in turbulent forced convection pipe flow for low to medium Prandtl numbers. <i>International Journal of Heat and Fluid Flow</i> , 2019, 77, 352-358.	1.1	10
47	Non-dimensional characteristics of open wet clutches for advanced drag torque and aeration predictions. <i>Tribology International</i> , 2020, 152, 106442.	3.0	10
48	Friction drag reduction through damping of the near-wall spanwise velocity fluctuation. <i>International Journal of Heat and Fluid Flow</i> , 2010, 31, 434-441.	1.1	9
49	Numerical simulation of the turbulent convective buoyant flow of sodium over a backward-facing step. <i>Journal of Physics: Conference Series</i> , 2016, 745, 032051.	0.3	9
50	A scaling parameter for pressure losses and thermal effects in lubricant flows with viscous dissipation. <i>Tribology International</i> , 2017, 113, 238-244.	3.0	9
51	Combined direct numerical simulation and long-wave simulation of a liquid film sheared by a turbulent gas flow in a channel. <i>Physics of Fluids</i> , 2019, 31, .	1.6	9
52	Modelling spanwise heterogeneous roughness through a parametric forcing approach. <i>Journal of Fluid Mechanics</i> , 2022, 930, .	1.4	9
53	Persistence of the laminar regime in a flat plate boundary layer at very high Reynolds number. <i>Thermal Science</i> , 2006, 10, 63-96.	0.5	8
54	An EHL Extension of the Unsteady FBNS Algorithm. <i>Tribology Letters</i> , 2022, 70, .	1.2	8

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55	Simulation of a gaseous jet impinging on a convex heated surface – effect of inlet condition. Applied Thermal Engineering, 2016, 105, 1076-1084.	3.0	7
56	The influence of operating conditions on combustion chamber deposit surface structure, deposit thickness and thermal properties. Automotive and Engine Technology, 2018, 3, 111-127.	0.7	7
57	Sensitivity of the Stribeck curve to the pin geometry of a pin-on-disc tribometer. Tribology International, 2020, 151, 106488.	3.0	7
58	Sequential Coupling Shows Minor Effects of Fluid Dynamics on Myocardial Deformation in a Realistic Whole-Heart Model. Frontiers in Cardiovascular Medicine, 2021, 8, 768548.	1.1	7
59	Predicting Turbulent Spectra in Drag-reduced Flows. Flow, Turbulence and Combustion, 2018, 100, 1081-1099.	1.4	6
60	Replication of left ventricular haemodynamics with a simple planar mitral valve model. Biomedizinische Technik, 2020, 65, 595-603.	0.9	6
61	Turbulent impinging jets on rough surfaces. GAMM Mitteilungen, 2022, 45, .	2.7	6
62	Ridge-type roughness: from turbulent channel flow to internal combustion engine. Experiments in Fluids, 2022, 63, 1.	1.1	6
63	Anisotropy Invariant Reynolds Stress Model of Turbulence (AIRSM) and its Application to Attached and Separated Wall-Bounded Flows. Flow, Turbulence and Combustion, 2009, 83, 81-103.	1.4	5
64	Erlangen pipe flow: the concept and DNS results for microflow control of near-wall turbulence. Microfluidics and Nanofluidics, 2012, 13, 429-440.	1.0	5
65	On the stages of vortex decay in an impulsively stopped, rotating cylinder. Journal of Fluid Mechanics, 2020, 885, .	1.4	5
66	Effects of spatially varying slip length on friction drag reduction in wall turbulence. Journal of Physics: Conference Series, 2011, 318, 022028.	0.3	4
67	Analytical modeling and dimensionless characteristics of open wet clutches in consideration of gravity. Forschung Im Ingenieurwesen/Engineering Research, 2021, 85, 849-857.	1.0	4
68	Microflow-based control of near-wall fluctuations for large viscous drag reduction. Microfluidics and Nanofluidics, 2011, 11, 773-780.	1.0	3
69	VLES Modeling of Flow Over Walls with Variably-shaped Roughness by Reference to Complementary DNS. Flow, Turbulence and Combustion, 2017, 99, 685-703.	1.4	3
70	Thermo-hydraulic flow in a sudden expansion. IOP Conference Series: Materials Science and Engineering, 2017, 228, 012001.	0.3	3
71	Parametric Study on Ridges Inducing Secondary Motions in Turbulent Channel Flow. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000139.	0.2	3
72	Spatial resolution issues in rough wall turbulence. Experiments in Fluids, 2022, 63, 1.	1.1	3

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73	On the flow resistance of wide surface structures. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 569-570.	0.2	2
74	A Novel Two-Step Model to Investigate Turbulent Gas Flows Shearing Thin Liquid Films. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900083.	0.2	2
75	The Role of Turbulent Dissipation for Flow Control of Near-Wall Turbulence. , 2007, , 268-275.		1
76	Heat Transfer Modeling of Confined Bubble Evaporation in a Microchannel. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900449.	0.2	1
77	NUMERICAL INVESTIGATION OF VAPOR BUBBLE GROWTH IN A RECTANGULAR MICROCHANNEL. , 2018, , .		1
78	Estimation of the spanwise wall shear stress based on upstream information for wall turbulence control. Springer Proceedings in Physics, 2009, , 209-212.	0.1	1
79	REYNOLDS ANALOGY IN TURBULENT FLOWS OVER ROUGH WALLS - A DNS INVESTIGATION. , 2018, , .		1
80	Theoretical Considerations about Near-Wall Turbulence and Resulting Flow Control Schemes. Proceedings in Applied Mathematics and Mechanics, 2010, 10, 743-746.	0.2	0
81	Non-sinusoidal wall oscillation for drag reduction. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 565-566.	0.2	0
82	The influence of frequency-limited and noise-contaminated sensing on reactive turbulence control schemes. Journal of Turbulence, 2012, 13, N16.	0.5	0
83	A Numerical Study of the Shear-Less Turbulent/Non-turbulent Interface. Springer Proceedings in Physics, 2016, , 37-40.	0.1	0
84	Reynolds-number scaling of a vorticity-annihilating boundary layer. Journal of Fluid Mechanics, 2021, 924, .	1.4	0
85	Effect of Near-Wall Componental Modification of Turbulence on Its Statistical Properties. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 127-133.	0.2	0
86	Effects of Different Friction Control Techniques on Turbulence Developing Around Wings. ERCOFTAC Series, 2020, , 305-311.	0.1	0
87	Direct Numerical Simulations of a Turbulent Flow over Wall-Mounted Obstacles – A Comparison of Different Numerical Approaches. ERCOFTAC Series, 2020, , 91-96.	0.1	0