Igor Bolotnov

List of Publications by Year
in descending order

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46	661	516561	610775
papers	citations	16 h-index	24 g-index

47	47	47	356
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Detached direct numerical simulations of turbulent two-phase bubbly channel flow. International Journal of Multiphase Flow, 2011, 37, 647-659.	1.6	69
2	Machine-learning based error prediction approach for coarse-grid Computational Fluid Dynamics (CG-CFD). Progress in Nuclear Energy, 2020, 118, 103140.	1.3	56
3	Evaluation of bubble-induced turbulence using direct numerical simulation. International Journal of Multiphase Flow, 2017, 93, 92-107.	1.6	47
4	Direct numerical simulation of reactor two-phase flows enabled by high-performance computing. Nuclear Engineering and Design, 2018, 330, 409-419.	0.8	36
5	Spectral analysis of turbulence based on the DNS of a channel flow. Computers and Fluids, 2010, 39, 640-655.	1.3	35
6	Influence of Bubbles on the Turbulence Anisotropy. Journal of Fluids Engineering, Transactions of the ASME, 2013, 135, .	0.8	29
7	Interface tracking simulations of bubbly flows in PWR relevant geometries. Nuclear Engineering and Design, 2017, 312, 205-213.	0.8	28
8	Estimation of Shear-Induced Lift Force in Laminar and Turbulent Flows. Nuclear Technology, 2015, 190, 274-291.	0.7	23
9	Slug-to-churn vertical two-phase flow regime transition study using an interface tracking approach. International Journal of Multiphase Flow, 2019, 115, 196-206.	1.6	23
10	Interfacial force study on a single bubble in laminar and turbulent flows. Nuclear Engineering and Design, 2017, 313, 345-360.	0.8	22
11	Bubble tracking analysis of PWR two-phase flow simulations based on the level set method. Nuclear Engineering and Design, 2017, 323, 68-77.	0.8	22
12	Numerical comparison of bubbling in a waste glass melter. Annals of Nuclear Energy, 2018, 113, 380-392.	0.9	22
13	Effect of the wall presence on the bubble interfacial forces in a shear flow field. International Journal of Multiphase Flow, 2018, 99, 73-85.	1.6	22
14	Turbulent cascade modeling of single and bubbly two-phase turbulent flows. International Journal of Multiphase Flow, 2008, 34, 1142-1151.	1.6	20
15	The evaporation and condensation model with interface tracking. International Journal of Heat and Mass Transfer, 2020, 150, 119256.	2.5	17
16	Progress in multiphase computational fluid dynamics. Nuclear Engineering and Design, 2021, 374, 111018.	0.8	17
17	Multiphase turbulence mechanisms identification from consistent analysis of direct numerical simulation data. Nuclear Engineering and Technology, 2017, 49, 1318-1325.	1.1	14
18	Interface-Resolved Simulations of Reactor Flows. Nuclear Technology, 2020, 206, 133-149.	0.7	13

#	Article	IF	Citations
19	Feasibility of full-core pin resolved CFD simulations of small modular reactor with momentum sources. Nuclear Engineering and Design, 2021, 378, 111143.	0.8	12
20	Coupled DNS/RANS Simulation of Fission Gas Discharge during Loss-of-Flow Accident in Generation IV Sodium Fast Reactor. Nuclear Technology, 2013, 181, 44-55.	0.7	10
21	Coalescence Prevention Algorithm for Level Set Method. Journal of Fluids Engineering, Transactions of the ASME, 2017, 139, .	0.8	10
22	Interface Tracking Investigation of Geometric Effects on the Bubbly Flow in PWR Subchannels. Nuclear Science and Engineering, 2019, 193, 46-62.	0.5	10
23	Complex bubble deformation and break-up dynamics studies using interface capturing approach. Experimental and Computational Multiphase Flow, 2021, 3, 139-151.	1.9	10
24	In-situ visualization and computational steering for large-scale simulation of turbulent flows in complex geometries. , 2014, , .		9
25	Development of a New Contact Angle Control Algorithm for Level-Set Method. Journal of Fluids Engineering, Transactions of the ASME, 2019, 141, .	0.8	8
26	Nucleate boiling simulation using interface tracking method. Nuclear Engineering and Design, 2020, 369, 110813.	0.8	8
27	A spectral turbulent cascade model for single- and two-phase uniform shear flows. Journal of Turbulence, 2008, 9, N26.	0.5	7
28	Interface capturing simulations of droplet interaction with spacer grids under DFFB conditions. Nuclear Engineering and Design, 2020, 364, 110685.	0.8	7
29	Interface capturing simulations of bubble population effects in PWR subchannels. Nuclear Engineering and Design, 2020, 365, 110709.	0.8	7
30	Multidimensional analysis of fission gas transport following fuel element failure in sodium fast reactor. Nuclear Engineering and Design, 2012, 247, 136-146.	0.8	6
31	Exploring Two-Phase Flow Regime Transition Mechanisms Using High-Resolution Virtual Experiments. Nuclear Science and Engineering, 2020, 194, 708-720.	0.5	6
32	Spectral Cascade Modeling of Turbulent Flow in a Channel. Japanese Journal of Multiphase Flow, 2009, 23, 190-204.	0.1	5
33	DNS of turbulent flow with hemispherical wall roughness. Journal of Turbulence, 2015, 16, 225-249.	0.5	4
34	Spectral Analysis of Single- and Two-Phase Bubbly DNS in Different Geometries. Nuclear Science and Engineering, 2016, 184, 363-376.	0.5	4
35	Wall-resolved spectral cascade-transport turbulence model. Nuclear Engineering and Design, 2017, 320, 309-324.	0.8	4
36	Two-Phase Turbulence Statistics from High Fidelity Dispersed Droplet Flow Simulations in a Pressurized Water Reactor (PWR) Sub-Channel with Mixing Vanes. Fluids, 2021, 6, 72.	0.8	4

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37	Interface Tracking Simulation of Phase-Change Phenomena: Boiling and Condensation Verification. , 2016, , .		3
38	Annular Flow Simulation Supported by Iterative In-Memory Mesh Adaptation. Nuclear Science and Engineering, 2020, 194, 676-689.	0.5	3
39	Evaluation of Length Scales and Meshing Requirements for Resolving Two-Phase Flow Regime Transitions Using the Level Set Method. Journal of Fluids Engineering, Transactions of the ASME, 2021, 143, .	0.8	3
40	Direct Numerical Simulation of Bubble Formation Through a Submerged â€œFluteâ€•With Experimental Validation. Journal of Fluids Engineering, Transactions of the ASME, 2022, 144, .	0.8	3
41	An adaptive knowledge-based data-driven approach for turbulence modeling using ensemble learning technique under complex flow configuration: 3D PWR sub-channel with DNS data. Nuclear Engineering and Design, 2022, 393, 111814.	0.8	2
42	Detailed Analysis of the Effects of Spacer Grid and Mixing Vanes on Turbulence in a PWR Subchannel Under DFFB Conditions Based on DNS Data. Nuclear Technology, 0, , 1-22.	0.7	1
43	Influence of Bubbles on the Turbulence Anisotropy. , 2012, , .		0
44	Interface Tracking Simulations of Two-Phase Flow Utilizing Adaptive Meshing Capabilities. , 2018, , .		0
45	Simulation scaling studies of reactor core two-phase flow using direct numerical simulation. Nuclear Engineering and Design, 2020, 358, 110435.	0.8	0
46	Foreword: Selected papers from the 2020 International Topical Meeting on Advances in Thermal Hydraulics (ATHâ€™20). Nuclear Technology, 2022, 208, iii-iii.	0.7	0