Igor Chernykh

List of Publications by Year
in descending order

68	286	1162889 8	996849 15
papers	citations	h-index	g-index

75	75	75	92
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	AstroPhi: A code for complex simulation of the dynamics of astrophysical objects using hybrid supercomputers. Computer Physics Communications, 2015, 186, 71-80.	3.0	44
2	An Efficient Optimization of Hll Method for the Second Generation of Intel Xeon Phi Processor. Lobachevskii Journal of Mathematics, 2018, 39, 543-551.	0.1	30
3	A New Hydrodynamic Code with Explicit Vectorization Instructions Optimizations that Is Dedicated to the Numerical Simulation of Astrophysical Gas Flow. I. Numerical Method, Tests, and Model Problems. Astrophysical Journal, Supplement Series, 2019, 243, 4.	3.0	30
4	A New Parallel Intel Xeon Phi Hydrodynamics Code for Massively Parallel Supercomputers. Lobachevskii Journal of Mathematics, 2018, 39, 1207-1216.	0.1	27
5	A New Hydrodynamic Model for Numerical Simulation of Interacting Galaxies on Intel Xeon Phi Supercomputers. Journal of Physics: Conference Series, 2016, 719, 012006.	0.3	13
6	A reactor for the study of homogeneous processes using laser radiation energy. Chemical Engineering Journal, 2009, 150, 231-236.	6.6	10
7	A New Rusanov-Type Solver with a Local Linear Solution Reconstruction for Numerical Modeling of White Dwarf Mergers by Means Massive Parallel Supercomputers. Lobachevskii Journal of Mathematics, 2020, 41, 1485-1491.	0.1	10
8	The Co-design of Astrophysical Code for Massively Parallel Supercomputers. Lecture Notes in Computer Science, 2016, , 342-353.	1.0	10
9	Astrophysics Simulation on RSC Massively Parallel Architecture. , 2015, , .		8
10	ChemPAK Software Package as an Environment for Kinetics Scheme Evaluation. Chemical Product and Process Modeling, 2009, 4, .	0.5	7
11	Atomic and Electronic Structures of Intrinsic Defects in Ta2O5: Ab Initio Simulation. JETP Letters, 2018, 107, 761-765.	0.4	7
12	Performance Evaluation of the Intel Optane DC Memory With Scientific Benchmarks. , 2019, , .		7
13	Physicochemical processes in a flow reactor using laser radiation energy for heating reactants. Chemical Engineering Research and Design, 2012, 90, 1918-1922.	2.7	5
14	Digital twins of multiscale 3D heterogeneous geological objects: 3D simulations and seismic imaging of faults, fractures and caves. Journal of Physics: Conference Series, 2019, 1392, 012051.	0.3	5
15	Parallel Realization of the Hybrid Model Code for Numerical Simulation of Plasma Dynamics. Journal of Physics: Conference Series, 2019, 1336, 012017.	0.3	5
16	The Hybrid-Cluster Multilevel Approach to Solving the Elastic Wave Propagation Problem. Communications in Computer and Information Science, 2017, , 261-274.	0.4	5
17	The Integrated Approach to Solving Large-Size Physical Problems on Supercomputers. Communications in Computer and Information Science, 2017, , 278-289.	0.4	5
18	A New Parallel Code Based on a Simple Piecewise Parabolic Method for Numerical Modeling of Colliding Flows in Relativistic Hydrodynamics. Mathematics, 2022, 10, 1865.	1.1	5

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19	Multilevel Parallelization: Grid Methods for Solving Direct and Inverse Problems. Communications in Computer and Information Science, 2016, , 118-131.	0.4	4
20	Evaluation of Intel Memory Drive Technology Performance for Scientific Applications. , 2018, , .		4
21	Co-design of Parallel Numerical Methods for Plasma Physics and Astrophysics. Supercomputing Frontiers and Innovations, 2014, 1, .	0.5	4
22	Autocatalytic dehydrogenation of propane. Research on Chemical Intermediates, 2014, 40, 345-356.	1.3	3
23	Mathematical modeling of formation, evolution and interaction of galaxies in cosmological context. Journal of Physics: Conference Series, 2016, 722, 012023.	0.3	3
24	High-Performance Computing in Astrophysical Simulations. Journal of Physics: Conference Series, 2016, 681, 012022.	0.3	3
25	Numerical simulations of astrophysical problems on massively parallel supercomputers. AIP Conference Proceedings, 2016, , .	0.3	3
26	Using Adaptive Nested Mesh Code HydroBox3D for Numerical Simulation of Type Ia Supernovae: Merger of Carbon-Oxygen White Dwarf Stars, Collapse, and Non-Central Explosion. , 2018, , .		3
27	Hydrogenâ€“helium chemical and nuclear galaxy collision: Hydrodynamic simulations on AVX-512 supercomputers. Journal of Computational and Applied Mathematics, 2021, 391, 113395.	1.1	3
28	Application of Geodesic Grids for Modeling the Hydrodynamic Processes in Spherical Objects. Journal of Applied and Industrial Mathematics, 2020, 14, 672-680.	0.1	3
29	The Parallel Hydrodynamic Code for Astrophysical Flow with Stellar Equations of State. Communications in Computer and Information Science, 2019, , 414-426.	0.4	2
30	Hydrodynamical Simulation of Astrophysical Flows: High-Performance GPU Implementation. Journal of Physics: Conference Series, 2019, 1336, 012014.	0.3	2
31	Hydrodynamic modeling of self-gravitating astrophysical objects on tetrahedral meshes. Journal of Physics: Conference Series, 2020, 1640, 012003.	0.3	2
32	Toward digital twins' workload allocation on clouds with low-cost microservices streaming interaction. , 2020, , .		2
33	Numerical simulations of astrophysical problems on massively parallel supercomputer. , 2016, , .		1
34	PADME â€“ new code for modeling of planet georesources formation on heterogeneous computing systems. MATEC Web of Conferences, 2018, 158, 01026.	0.1	1
35	Numerical Modeling of Hydrodynamic Turbulence with Self-gravity on Intel Xeon Phi KNL. Communications in Computer and Information Science, 2019, , 309-322.	0.4	1
36	Advanced Vectorization of PPML Method for IntelÂ® XeonÂ® Scalable Processors. Communications in Computer and Information Science, 2019, , 465-471.	0.4	1

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37	A Scalable Parallel Computing Framework for Large-Scale Astrophysical Fluid Dynamics Numerical Simulation. , 2019, , .		1
38	Development of simulation model of HPC system for Super Charm-Tau factory. Journal of Physics: Conference Series, 2019, 1336, 012025.	0.3	1
39	Performance improvement of particle-in-cell method for numerical modelling of open magnetic system. Journal of Physics: Conference Series, 2020, 1640, 012014.	0.3	1
40	The Energy Efficiency Research of Godunov Method on Intel Xeon Scalable Architecture. , 2021, , .		1
41	SIMULATION MODEL OF AN HPC SYSTEM FOR SUPER CHARM-TAU FACTORY. , 0, , .		1
42	Mathematical Modeling of a High-Speed Collision of White Dwarfsâ€”the Explosion Mechanism of Type Ia/Iax Supernovae. Journal of Applied and Industrial Mathematics, 2022, 16, 80-88.	0.1	1
43	Computer Simulation Of Chemical Processes And Fluid Flows In Chemical Reactors. , 2010, , .		0
44	Numerical Modeling of Jellyfish Galaxy at Intel Xeon Phi Supercomputers. , 2017, , .		0
45	The numerical modelling of MHD astrophysical flows with chemistry. Journal of Physics: Conference Series, 2017, 894, 012132.	0.3	0
46	A new Intel Xeon Phi accelerated hydrodynamic code for numerical simulations of interacting galaxies. Journal of Physics: Conference Series, 2018, 1103, 012010.	0.3	0
47	Numerical modelling of the neutral hydrogen dynamics for astrophysical problems. Journal of Physics: Conference Series, 2018, 1103, 012021.	0.3	0
48	The hydrodynamical modeling of the Supernovae Ia explosion by means adaptive nested meshes on supercomputers. Journal of Physics: Conference Series, 2019, 1268, 012038.	0.3	0
49	Analysis of Means of Simulation Modeling of Parallel Algorithms. Communications in Computer and Information Science, 2019, , 29-39.	0.4	0
50	A new MPI/OpenMP code for numerical modeling of relativistic hydrodynamics by means adaptive nested meshes. Journal of Physics: Conference Series, 2019, 1336, 012008.	0.3	0
51	Computer simulation of diamagnetic regime in open magnetic trap. Journal of Physics: Conference Series, 2019, 1336, 012013.	0.3	0
52	Scalability investigation of parallel algorithms for plasma dynamics problems in open magnetic traps by simulation modeling. Journal of Physics: Conference Series, 2019, 1336, 012024.	0.3	0
53	Simulation of formaldehyde formation during a galaxy collision using vectorized numerical method on Intel Xeon Phi accelerators. Journal of Physics: Conference Series, 2019, 1368, 042023.	0.3	0
54	The numerical modeling of moving of dwarf galaxy through the intracluster medium. Journal of Physics: Conference Series, 2019, 1336, 012004.	0.3	0

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55	The parallel & distributed code for numerical simulation of relativistic magnetohydrodynamics simulation. Journal of Physics: Conference Series, 2020, 1640, 012001.	0.3	0
56	The Supercomputing Simulation of Instability and Shock Waves in Gas Giant. Journal of Physics: Conference Series, 2020, 1640, 012005.	0.3	0
57	M2H3D Code: Moving Mesh Hydrodynamics by Means AVX-2 Technology. Communications in Computer and Information Science, 2021, , 307-319.	0.4	0
58	A study of white dwarf shock detonation and type Ia supernova explosion. Journal of Physics: Conference Series, 2021, 2028, 012004.	0.3	0
59	On a simple verification test of codes for modelling of magnetohydrodynamic turbulence. Journal of Physics: Conference Series, 2021, 2028, 012003.	0.3	0
60	Improving the Performance of an AstroPhi Code for Massively Parallel Supercomputers Using Roofline Analysis. Communications in Computer and Information Science, 2017, , 400-406.	0.4	0
61	Relativistic Hydrodynamics Modeling by Means Adaptive Nested Mesh on IBM Power 9. Communications in Computer and Information Science, 2019, , 350-362.	0.4	0
62	Evaluation of Intel Memory Drive Technology Performance for Computational Astrophysics. Communications in Computer and Information Science, 2019, , 563-572.	0.4	0
63	Digital Twin of the Seismogeological Object: Building and Application. Communications in Computer and Information Science, 2019, , 214-224.	0.4	0
64	Simulating Relativistic Jet on the NKS-1P Supercomputer with Intel Broadwell Computing Nodes. Communications in Computer and Information Science, 2020, , 224-236.	0.4	0
65	The Collision of Giant Molecular Cloud with Galaxy: Hydrodynamics, Star Formation, Chemistry. , 2020, , 261-267.		0
66	The Numerical Simulation of Radial Age Gradients in Spiral Galaxies. Communications in Computer and Information Science, 2020, , 365-374.	0.4	0
67	The Efficiency of Hydrodynamic Code on Intel Xeon Scalable Architecture. , 2021, , .		0
68	Modelling of Chemical Reactors using Supercomputers. , 0, , .		0