

Valentin N Ryzhov

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124
papers

2,646
citations

29
h-index

46
g-index

131
ext. papers

2,869
ext. citations

2.3
avg, IF

5.28
L-index

#	Paper	IF	Citations
124	Two liquid states of matter: a dynamic line on a phase diagram. <i>Physical Review E</i> , 2012 , 85, 031203	2.4	175
123	"Liquid-gas" transition in the supercritical region: fundamental changes in the particle dynamics. <i>Physical Review Letters</i> , 2013 , 111, 145901	7.4	127
122	Widom line for the liquid-gas transition in Lennard-Jones system. <i>Journal of Physical Chemistry B</i> , 2011 , 115, 14112-5	3.4	103
121	Quasibinary amorphous phase in a three-dimensional system of particles with repulsive-shoulder interactions. <i>Journal of Chemical Physics</i> , 2008 , 129, 064512	3.9	103
120	Waterlike thermodynamic anomalies in a repulsive-shoulder potential system. <i>Physical Review E</i> , 2009 , 79, 051202	2.4	89
119	Where is the supercritical fluid on the phase diagram?. <i>Physics-Uspekhi</i> , 2012 , 55, 1061-1079	2.8	83
118	Two-stage melting in two dimensions: First-principles approach. <i>Physical Review B</i> , 1995 , 51, 8789-8794	3.3	73
117	Thermodynamic properties of supercritical carbon dioxide: Widom and Frenkel lines. <i>Physical Review E</i> , 2015 , 91, 022111	2.4	66
116	Breakdown of excess entropy scaling for systems with thermodynamic anomalies. <i>Physical Review E</i> , 2010 , 81, 061201	2.4	63
115	Complex crystalline structures in a two-dimensional core-softened system. <i>Soft Matter</i> , 2018 , 14, 2152-2162	3.62	52
114	Inversion of sequence of diffusion and density anomalies in core-softened systems. <i>Journal of Chemical Physics</i> , 2011 , 135, 234502	3.9	51
113	Van der Waals supercritical fluid: exact formulas for special lines. <i>Journal of Chemical Physics</i> , 2011 , 135, 084503	3.9	50
112	Superfragile glassy dynamics of a one-component system with isotropic potential: competition of diffusion and frustration. <i>Physical Review Letters</i> , 2013 , 110, 025701	7.4	49
111	Solvable model of a quadrupolar glass. <i>Journal of Physics C: Solid State Physics</i> , 1984 , 17, L665-L667		49
110	Repulsive step potential: a model for a liquid-liquid phase transition. <i>Physical Review E</i> , 2003 , 67, 010201	2.4	46
109	Berezinskii-Kosterlitz-Thouless transition and two-dimensional melting. <i>Physics-Uspekhi</i> , 2017 , 60, 857-885	2.8	43
108	How dimensionality changes the anomalous behavior and melting scenario of a core-softened potential system?. <i>Soft Matter</i> , 2014 , 10, 4966-76	3.6	42

107	Silicalike sequence of anomalies in core-softened systems. <i>Physical Review E</i> , 2013 , 87, 042122	2.4	40
106	Core-softened system with attraction: trajectory dependence of anomalous behavior. <i>Journal of Chemical Physics</i> , 2011 , 135, 124512	3.9	40
105	Effect of a potential softness on the solid-liquid transition in a two-dimensional core-softened potential system. <i>Journal of Chemical Physics</i> , 2014 , 141, 18C522	3.9	39
104	True Widom line for a square-well system. <i>Physical Review E</i> , 2014 , 89, 042136	2.4	39
103	Soliton and 2D Domains in Ultrathin Magnetic Films. <i>Physical Review Letters</i> , 1997 , 78, 2224-2227	7.4	38
102	Complex phase behavior of the system of particles with smooth potential with repulsive shoulder and attractive well. <i>Journal of Chemical Physics</i> , 2011 , 134, 044523	3.9	37
101	Melting in two dimensions: first-order versus continuous transition. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2002 , 314, 396-404	3.3	35
100	Evidence for structural crossover in the supercritical state. <i>Journal of Chemical Physics</i> , 2013 , 139, 234503	3.9	34
99	Dynamical crossover line in supercritical water. <i>Scientific Reports</i> , 2015 , 5, 14234	4.9	32
98	Random pinning changes the melting scenario of a two-dimensional core-softened potential system. <i>Physical Review E</i> , 2015 , 92, 032110	2.4	32
97	Generalized van der Waals theory of liquid-liquid phase transitions. <i>Physical Review E</i> , 2006 , 74, 041201	2.4	30
96	Statistical theory of crystallization in a system of hard spheres. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1981 , 48, 835-840	0.7	29
95	Collapse transition in mixtures of bosons and fermions. <i>Physical Review A</i> , 2004 , 69,	2.6	28
94	Towards a statistical theory of freezing. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1979 , 75, 88-90	2.3	28
93	How to quantify structural anomalies in fluids?. <i>Journal of Chemical Physics</i> , 2014 , 141, 034508	3.9	27
92	Vortex states in a binary mixture of Bose-Einstein condensates. <i>Physical Review A</i> , 2001 , 63,	2.6	25
91	Where is the supercritical fluid on the phase diagram?. <i>Uspekhi Fizicheskikh Nauk</i> , 2012 , 182, 1137-1156	0.5	25
90	Dynamic transition in supercritical iron. <i>Scientific Reports</i> , 2014 , 4, 7194	4.9	24

89	Water-like anomalies in the core-softened systems: Dependence on the trajectory in density-temperature plane. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2011 , 375, 2181-2184	2.3	24
88	Universal crossover of liquid dynamics in supercritical region. <i>JETP Letters</i> , 2012 , 95, 164-169	1.2	23
87	The phase diagram and melting scenarios of two-dimensional Hertzian spheres. <i>Molecular Physics</i> , 2018 , 116, 3258-3270	1.7	23
86	Melting of Two-Dimensional Systems: Dependence of the Type of Transition on the Radius of the Potential. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 2002 , 130, 101-110	0.7	22
85	Low-temperature phase transition in the three-state Potts glass. <i>Physical Review E</i> , 2003 , 68, 067103	2.4	21
84	Phase diagram of the system with the repulsive shoulder potential in two dimensions: Density functional approach. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2015 , 432, 279-286	3.3	20
83	Results for the phase diagram of the vortex system in two-dimensional superconductors. <i>Physical Review B</i> , 1994 , 49, 6162-6173	3.3	20
82	Dynamics, thermodynamics and structure of liquids and supercritical fluids: crossover at the Frenkel line. <i>Journal of Physics Condensed Matter</i> , 2018 , 30, 134003	1.8	19
81	Phase separation and vortex states in the binary mixture of Bose-Einstein condensates. <i>Journal of Experimental and Theoretical Physics</i> , 2000 , 91, 1183-1189	1	19
80	Crossover of collective modes and positive sound dispersion in supercritical state. <i>Journal of Physics Condensed Matter</i> , 2016 , 28, 43LT01	1.8	19
79	Melting Scenario of the Two-Dimensional Core-Softened System: First-Order or Continuous Transition?. <i>Journal of Physics: Conference Series</i> , 2014 , 510, 012016	0.3	18
78	Inversion of sequence of anomalies in core-softened systems with attraction. <i>European Physical Journal: Special Topics</i> , 2013 , 216, 165-173	2.3	18
77	Statistical mechanics of vortex systems in two-dimensional superconductors. <i>Physical Review B</i> , 1993 , 48, 12907-12911	3.3	18
76	Local structure and bond orientational order in a Lennard-Jones liquid. <i>Journal of Physics Condensed Matter</i> , 1990 , 2, 5855-5865	1.8	18
75	Liquid-like and gas-like features of a simple fluid: An insight from theory and simulation. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2018 , 509, 690-702	3.3	17
74	Transport coefficients of soft sphere fluid at high densities. <i>JETP Letters</i> , 2012 , 95, 320-325	1.2	17
73	Properties of liquid iron along the melting line up to Earth-core pressures. <i>Journal of Physics Condensed Matter</i> , 2013 , 25, 285104	1.8	17
72	A liquid-liquid phase transition in the collapsing hard sphere system. <i>Journal of Experimental and Theoretical Physics</i> , 2002 , 95, 710-713	1	17

71	Bond orientational order in simple liquids. <i>Journal of Physics C: Solid State Physics</i> , 1988 , 21, 819-824		17
70	The behavior of cyclohexane confined in slit carbon nanopore. <i>Journal of Chemical Physics</i> , 2015 , 143, 184702	3.9	15
69	First-order vortex unbinding transition in thin superconducting films. <i>Physical Review B</i> , 1996 , 54, 3051-3054	3.5	15
68	Disclination-mediated melting of two-dimensional lattices. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1991 , 88, 990-997	0.7	15
67	Isoviscosity lines and the liquid-glass transition in simple liquids. <i>Physical Review E</i> , 2012 , 86, 011503	2.4	14
66	Stability of the Bose system in Bose-Fermi mixture with attraction between bosons and fermions. <i>JETP Letters</i> , 2004 , 80, 274-279	1.2	14
65	Reflection symmetry in mean-field replica-symmetric spin glasses. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2003 , 315, 467-473	2.3	14
64	Statistical theory of crystallization in classical systems. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1983 , 55, 399-405	0.7	14
63	Comment on "Behavior of Supercritical Fluids across the 'Frenkel Line'". <i>Journal of Physical Chemistry B</i> , 2018 , 122, 6124-6128	3.4	13
62	Vortex-vortex interaction in a superconducting film of finite thickness. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1995 , 207, 374-378	2.3	13
61	The behavior of benzene confined in a single wall carbon nanotube. <i>Journal of Computational Chemistry</i> , 2015 , 36, 901-6	3.5	12
60	Solitons and edge domains in multilayers. <i>Journal of Magnetism and Magnetic Materials</i> , 1998 , 177-181, 1303-1304	2.8	12
59	Phase separation and vortex states in binary mixture of Bose-Einstein condensates in trapping potentials with displaced centers. <i>JETP Letters</i> , 2002 , 75, 233-237	1.2	12
58	Microscopic description of bond orientational order in simple liquids. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1987 , 73, 1344-1352	0.7	11
57	Renormalization group study of the melting of a two-dimensional system of collapsing hard disks. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 2017 , 191, 842-855	0.7	10
56	180° domain walls in ultra-thin magnetic films with fourfold anisotropy. <i>Journal of Magnetism and Magnetic Materials</i> , 1998 , 182, 25-30	2.8	10
55	Stable and unstable regimes in Bose-Fermi mixtures with attraction between components. <i>Physical Review A</i> , 2007 , 76,	2.6	10
54	A Simple Cluster Model for the Liquid-Glass Transition. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 2004 , 141, 1443-1451	0.7	10

53	Complex phase diagrams of systems with isotropic potentials: results of computer simulations. <i>Physics-Uspekhi</i> , 2020 , 63, 417-439	2.8	10
52	The Frenkel line and supercritical technologies. <i>Russian Journal of Physical Chemistry B</i> , 2014 , 8, 1087-1094	2.4	9
51	Singularity of the swallow-tail type and the glass-glass transition in a system of collapsing hard spheres. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 2011 , 167, 645-653	0.7	9
50	Vortex state in a Bose-Fermi mixture with attraction between bosons and fermions. <i>Physical Review A</i> , 2006 , 73,	2.6	9
49	Microscopic approach to calculation of the shear and bulk moduli and the Frank constant in two-dimensional melting. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1992 , 92, 922-930	0.7	9
48	The influence of random pinning on the melting scenario of two-dimensional soft-disk systems. <i>Molecular Physics</i> , 2019 , 117, 2910-2919	1.7	8
47	Viscosity anomaly in core-softened liquids. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2013 , 377, 1469-1473	2.3	8
46	Review of a book on the anniversary of the theory of the Berezinskii-Kosterlitz-Thouless transition a book which proved to be a precursor of the 2016 Nobel Prize in physics. <i>Physics-Uspekhi</i> , 2017 , 60, 114-118	2.8	7
45	Anomalous melting scenario of the two-dimensional core-softened system. <i>Physical Review Letters</i> , 2014 , 112, 157803	7.4	7
44	Cluster model of glass transition in simple liquids. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2004 , 329, 244-249	2.3	7
43	Orientalional ordering of bonds in simple three-dimensional liquids. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1989 , 80, 745-752	0.7	7
42	Solvable model of quadrupole glass with axial interaction. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1986 , 67, 623-627	0.7	7
41	Supercritical fluid of particles with a Yukawa potential: A new approximation for the direct correlation function and the Widom line. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 2016 , 189, 1806-1817	0.7	7
40	Dynamical crossover in supercritical core-softened fluids. <i>Fluid Phase Equilibria</i> , 2016 , 417, 237-241	2.5	7
39	Supercritical Anomalies and the Widom Line for the Isostructural Phase Transition in Solids. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 2018 , 194, 148-156	0.7	6
38	The Frenkel line and isotope effect. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2016 , 444, 890-896	2.6	6
37	Domain structures in ferromagnetic ultrathin films with in-plane magnetization. <i>Physical Review B</i> , 1999 , 60, 10271-10279	3.3	6
36	Statistical mechanics of a vortex system in a thin superconducting film using the cyclic approximation. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1996 , 107, 499-510	0.7	6

35	Statistical mechanics of vortex system in a thin-film superconductor in the ring approximation. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1993 , 96, 1062-1068	0.7	6
34	New exactly solvable model: \mathbb{R}^d -state Potts model. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2006 , 353, 226-229	2.3	5
33	Hexatic phase: microscopic approach to the Frank constant. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1991 , 158, 321-324	2.3	5
32	Hexatic phase in thin-film superconductors. <i>Physica C: Superconductivity and Its Applications</i> , 1993 , 205, 55-62	1.3	5
31	Magnetic solitons in a compressible Heisenberg chain. <i>Journal of Physics C: Solid State Physics</i> , 1983 , 16, L1125-L1128		5
30	Melting scenarios of two-dimensional Hertzian spheres with a single triangular lattice. <i>Soft Matter</i> , 2020 , 16, 3962-3972	3.6	4
29	Quantum-to-classical crossover near quantum critical point. <i>Scientific Reports</i> , 2015 , 5, 18600	4.9	4
28	High pressure studies of the phase transition in the ferroelectric Sn ₂ P ₂ S ₆ . <i>Solid State Communications</i> , 2016 , 236, 23-26	1.6	4
27	Theoretical studies of condensed matter. <i>Physics-Uspekhi</i> , 2008 , 51,	2.8	4
26	Amplification of trap centres position difference in mixtures of Bose-Einstein condensates. <i>Journal of Physics Condensed Matter</i> , 2002 , 14, L77-L82	1.8	4
25	Interplay between freezing and density anomaly in a confined core-softened fluid. <i>Molecular Physics</i> , 2020 , 118, e1718792	1.7	3
24	Excitation spectra of liquid iron up to superhigh temperatures. <i>Journal of Physics Condensed Matter</i> , 2017 , 29, 345401	1.8	3
23	On the liquid phase instability criterion. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1981 , 109, 357-363	3.3	3
22	Experimental study of water thermodynamics up to 1.2 GPa and 473 K. <i>Journal of Chemical Physics</i> , 2020 , 152, 154501	3.9	3
21	The behaviour of water and sodium chloride solution confined into asbestos nanotube. <i>Molecular Physics</i> , 2016 , 114, 2279-2288	1.7	2
20	A toy MCT model for multiple glass transitions: Double swallow tail singularity. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2014 , 378, 3567-3571	2.3	2
19	On the critical temperature in a Boson-Fermion mixture with attraction between the components. <i>JETP Letters</i> , 2008 , 87, 376-380	1.2	2
18	On the 50th anniversary of the L F Vereshchagin Institute for High Pressure Physics, RAS (Scientific outreach session of the Physical Sciences Division of the Russian Academy of Sciences, 23 April 2008). <i>Physics-Uspekhi</i> , 2008 , 51, 1055-1083	2.8	2

17	Bose condensate of ultracold atoms in traps: Bose-bose and bose-fermi mixtures. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 2008 , 154, 123-136	0.7	2
16	Collapse mechanism of the condensate wavefunction in the Bose-Fermi mixture with attraction between the components. <i>JETP Letters</i> , 2006 , 84, 294-299	1.2	2
15	Water-Like Anomalies of Core-Softened Fluids: Dependence on the Trajectories in (P μ) Space. <i>Advances in Chemical Physics</i> , 81-100		2
14	The influence of long-range interaction on the structure of a two-dimensional multi scale potential system. <i>Journal of Physics Condensed Matter</i> , 2019 , 31, 315103	1.8	1
13	Possible phase transition in liquid caesium at ambient pressure. <i>Physics and Chemistry of Liquids</i> , 2019 , 57, 650-657	1.5	1
12	Simple formula for the switching field of ultrathin small magnetic structures. <i>Journal of Applied Physics</i> , 1999 , 85, 1978-1980	2.5	1
11	Statistical mechanics of a vortex system in a thin superconducting film in the cyclic approximation. II. Finite thickness and vortex bending. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1995 , 104, 1035-1042	0.7	1
10	Complex phase diagrams of systems with isotropic potentials: results of computer simulations. <i>Uspekhi Fizicheskikh Nauk</i> , 2020 , 190, 449-473	0.5	1
9	The Berezinskii-Kosterlitz-Thouless Transition and Melting Scenarios of Two-Dimensional Systems. <i>Physics of Particles and Nuclei</i> , 2020 , 51, 786-790	0.7	1
8	Structural transition in two-dimensional Hertzian spheres in the presence of random pinning. <i>Physical Review E</i> , 2021 , 103, 062612	2.4	1
7	Effective Hamiltonian study of excitations in a boson-fermion mixture with attraction between components. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2010 , 43, 225301	1.3	0
6	The role of attraction in the phase diagrams and melting scenarios of generalized 2D Lennard-Jones systems.. <i>Journal of Chemical Physics</i> , 2022 , 156, 114703	3.9	0
5	Possible Scenarios of a Phase Transition from Isotropic Liquid to a Hexatic Phase in the Theory of Melting in Two-Dimensional Systems. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 2019 , 200, 1053-1062	0.7	
4	Structural instability in one-dimensional orthohydrogen. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1979 , 72, 373-375	2.3	
3	Orientalional ordering in molecular hydrogen. IV. Phase transition of the second kind in the hexagonal lattice. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1979 , 40, 738-742	0.7	
2	Transitions in Simple Liquids: Correlation Function Approach 2002 , 527-543		
1	Degenerate approach to the mean field Bose-Hubbard Hamiltonian. <i>European Physical Journal B</i> , 2016 , 89, 1	1.2	