

A E Filippov

List of Publications by Year in descending order

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130
papers

2,955
citations

257101

24
h-index

182168

51
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131
all docs

131
docs citations

131
times ranked

2192
citing authors

#	ARTICLE	IF	CITATIONS
1	Phase transitions in individual sub-micrometre superconductors. <i>Nature</i> , 1997, 390, 259-262.	13.7	388
2	Beyond the conventional description of dynamic force spectroscopy of adhesion bonds. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2003, 100, 11378-11381.	3.3	251
3	Friction through Dynamical Formation and Rupture of Molecular Bonds. <i>Physical Review Letters</i> , 2004, 92, 135503.	2.9	198
4	Torque and Twist against Superlubricity. <i>Physical Review Letters</i> , 2008, 100, 046102.	2.9	190
5	Hydrodynamic spinodal decomposition: Growth kinetics and scaling functions. <i>Physical Review B</i> , 1993, 48, 634-637.	1.1	113
6	Visualization of Wave Propagation and Fine Structure in Frictional Motion of Unconstrained Soft Microstructured Tapes. <i>Tribology Letters</i> , 2017, 65, 1.	1.2	95
7	Dynamic force spectroscopy: a Fokker-Planck approach. <i>Chemical Physics Letters</i> , 2002, 352, 499-504.	1.2	91
8	Influence of Ultrasonic In-Plane Oscillations on Static and Sliding Friction and Intrinsic Length Scale of Dry Friction Processes. <i>Tribology Letters</i> , 2010, 39, 25-30.	1.2	88
9	Adhesion Failure at 180,000 Frames per Second: Direct Observation of the Detachment Process of a Mushroom-Shaped Adhesive. <i>Physical Review Letters</i> , 2013, 111, 104301.	2.9	75
10	Shear induced adhesion: Contact mechanics of biological spatula-like attachment devices. <i>Journal of Theoretical Biology</i> , 2011, 276, 126-131.	0.8	72
11	Normal contact stiffness of elastic solids with fractal rough surfaces for one- and three-dimensional systems. <i>Physical Review E</i> , 2012, 86, 026710.	0.8	64
12	Tuning Diffusion and Friction in Microscopic Contacts By Mechanical Excitations. <i>Physical Review Letters</i> , 2005, 95, 016101.	2.9	59
13	Fibrillar adhesion with no clusterisation: Functional significance of material gradient along adhesive setae of insects. <i>Beilstein Journal of Nanotechnology</i> , 2014, 5, 837-845.	1.5	56
14	Frictional-anisotropy-based systems in biology: structural diversity and numerical model. <i>Scientific Reports</i> , 2013, 3, 1240.	1.6	55
15	Fractal Tomlinson model for mesoscopic friction: From microscopic velocity-dependent damping to macroscopic Coulomb friction. <i>Physical Review E</i> , 2007, 75, 027103.	0.8	43
16	Single-Molecule Tribology: Force Microscopy Manipulation of a Porphyrin Derivative on a Copper Surface. <i>ACS Nano</i> , 2016, 10, 713-722.	7.3	40
17	Friction Between a Viscoelastic Body and a Rigid Surface with Random Self-Affine Roughness. <i>Physical Review Letters</i> , 2013, 111, 034301.	2.9	39
18	Low friction and rotational dynamics of crystalline flakes in solid lubrication. <i>Europhysics Letters</i> , 2011, 95, 66002.	0.7	38

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19	Unzipping bird feathers. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20130988.	1.5	32
20	Modelling of the frictional behaviour of the snake skin covered by anisotropic surface nanostructures. <i>Scientific Reports</i> , 2016, 6, 23539.	1.6	31
21	Origin of Friction Anisotropy on a Quasicrystal Surface. <i>Physical Review Letters</i> , 2010, 104, 074302.	2.9	29
22	Spatial model of the gecko foot hair: functional significance of highly specialized non-uniform geometry. <i>Interface Focus</i> , 2015, 5, 20140065.	1.5	29
23	Traffic jams and hysteresis in driven one-dimensional systems. <i>Physical Review E</i> , 1998, 58, 1311-1324.	0.8	28
24	Confined Molecules under Shear: From a Microscopic Description to Phenomenology. <i>Physical Review Letters</i> , 2001, 87, 275506.	2.9	27
25	Formation and rupture of capillary bridges in atomic scale friction. <i>Journal of Chemical Physics</i> , 2012, 137, 164706.	1.2	23
26	Reconstruction of potential from dynamic experiments. <i>Physical Review E</i> , 2007, 75, 066104.	0.8	22
27	Force of friction between fractal rough surface and elastomer. <i>Technical Physics Letters</i> , 2010, 36, 525-527.	0.2	21
28	Modelling of the growth of populations of <i>Listeria monocytogenes</i> and a bacteriocin-producing strain of <i>Lactobacillus</i> in pure and mixed cultures. <i>Food Microbiology</i> , 2001, 18, 605-615.	2.1	20
29	Effect of tip flexibility on stick-slip motion in friction force microscopy experiments. <i>Journal of Physics Condensed Matter</i> , 2008, 20, 354002.	0.7	19
30	Insect wet steps: loss of fluid from insect feet adhering to a substrate. <i>Journal of the Royal Society Interface</i> , 2013, 10, 20120639.	1.5	19
31	Slow viscoelastic response of resilin. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2018, 204, 409-417.	0.7	19
32	Distortion of a Substrate Induced by Adsorption at Solid-Liquid Interfaces. <i>Physical Review Letters</i> , 1998, 81, 3904-3907.	2.9	18
33	Oil adsorption ability of three-dimensional epicuticular wax coverages in plants. <i>Scientific Reports</i> , 2017, 7, 45483.	1.6	18
34	Fluctuation effects in an exactly solvable model of phase transitions. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1986, 119, 55-59.	0.9	17
35	Flexible tissue with fibres interacting with an adhesive surface. <i>Journal of Physics Condensed Matter</i> , 2007, 19, 096012.	0.7	17
36	Modeling of the dynamic contact in stick-slip microdrives using the method of reduction of dimensionality. <i>Physical Mesomechanics</i> , 2012, 15, 287-292.	1.0	16

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37	Nanosopic Friction under Electrochemical Control. <i>Physical Review Letters</i> , 2014, 112, 055502.	2.9	16
38	Male penile propulsion into spiraled spermathecal ducts of female chrysomelid beetles: A numerical simulation approach. <i>Journal of Theoretical Biology</i> , 2015, 384, 140-146.	0.8	16
39	Numerical simulation of colloidal self-assembly of super-hydrophobic arachnid cerotegument structures. <i>Journal of Theoretical Biology</i> , 2017, 430, 1-8.	0.8	16
40	On the physical branch of the exact (local) RG equation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1991, 158, 300-306.	0.9	15
41	Inverted stick-slip friction: What is the mechanism?. <i>Journal of Chemical Physics</i> , 2002, 116, 6871-6874.	1.2	15
42	Directed molecular transport in an oscillating symmetric channel. <i>Physical Review E</i> , 2004, 69, 011908.	0.8	15
43	Mechanism of Wear and Ripple Formation Induced by the Mechanical Action of an Atomic Force Microscope Tip. <i>Physical Review Letters</i> , 2011, 106, 025502.	2.9	14
44	Diffusion through Bifurcations in Oscillating Nano- and Microscale Contacts: Fundamentals and Applications. <i>Physical Review X</i> , 2015, 5, .	2.8	14
45	Stiffness gradient of the beetle penis facilitates propulsion in the spiraled female spermathecal duct. <i>Scientific Reports</i> , 2016, 6, 27608.	1.6	14
46	New small RG parameter. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1990, 150, 100-104.	0.9	13
47	On the structure of critical nuclei at first-order phase transitions in 3d systems. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1992, 165, 159-164.	0.9	13
48	Study of a local RG approximation. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1993, 192, 486-515.	1.2	13
49	Influence of tangential displacement on the adhesion strength of a contact between a parabolic profile and an elastic half-space. <i>Royal Society Open Science</i> , 2017, 4, 161010.	1.1	13
50	Identification and Space-Time Evolution of Vortex-Like Motion of Atoms in a Loaded Solid. <i>Physical Mesomechanics</i> , 2018, 21, 419-429.	1.0	13
51	Chemical Control of Friction: Mixed Lubricant Monolayers. <i>Tribology Letters</i> , 2002, 12, 217-227.	1.2	12
52	Converting displacement dynamics into creep in block media. <i>Technical Physics Letters</i> , 2006, 32, 545-549.	0.2	12
53	Normal contact between a rigid surface and a viscous body: Verification of the method of reduction of dimensionality for viscous media. <i>Physical Mesomechanics</i> , 2012, 15, 270-274.	1.0	12
54	Simulation of the influence of ultrasonic in-plane oscillations on dry friction accounting for stick and creep. <i>Physical Mesomechanics</i> , 2012, 15, 330-332.	1.0	12

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55	Biological microstructures with high adhesion and friction. Numerical approach. Physics-Uspexhi, 2016, 59, 829-845.	0.8	12
56	Critical roughness in animal hairy adhesive pads: a numerical modeling approach. Bioinspiration and Biomimetics, 2018, 13, 066004.	1.5	12
57	Specific character of metamagnetic transitions in Fe ₂ P. Journal of Magnetism and Magnetic Materials, 1984, 43, 53-58.	1.0	11
58	Numerical simulation of the pattern formation of the springtail cuticle nanostructures. Journal of the Royal Society Interface, 2018, 15, 20180217.	1.5	11
59	Molecular Dynamics Study of the Evolution of Rotational Atomic Displacements in a Crystal Subjected to Shear Deformation. Physical Mesomechanics, 2019, 22, 375-381.	1.0	11
60	Numerical Model of the Slithering Snake Locomotion Based on the Friction Anisotropy of the Ventral Skin. Tribology Letters, 2018, 66, 1.	1.2	10
61	Critical behavior and finite volume. Theoretical and Mathematical Physics(Russian Federation), 1986, 67, 413-418.	0.3	9
62	Oxygen ordering at the structural phase transition in Y-Ba-Cu-O. Phase Transitions, 1990, 22, 31-42.	0.6	9
63	Kinetics of vortex structure formation in magnetic materials. Journal of Experimental and Theoretical Physics, 1997, 84, 971-977.	0.2	9
64	Modified Burridgeâ€“Knopoff model with state dependent friction. Tribology International, 2010, 43, 1392-1399.	3.0	9
65	Modelling clustering of vertically aligned carbon nanotube arrays. Interface Focus, 2015, 5, 20150026.	1.5	9
66	Nucleation at the fluctuation induced first order phase transition to superconductivity. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 192, 131-136.	0.9	8
67	Kinetics of vortex formation in superconductors with pairing. Physical Review B, 1996, 54, 3504-3507.	1.1	8
68	Fluctuation effects at solidâ€“liquid interfaces. Surface Science, 1999, 422, L200-L205.	0.8	8
69	Stochastic modelling of the growth of a microbial population under changing temperature regimes. International Journal of Food Microbiology, 2001, 64, 317-323.	2.1	8
70	To optimal elasticity of adhesives mimicking gecko foot-hairs. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 358, 309-312.	0.9	8
71	The effect of lateral vibrations on transport and friction in nanoscale contacts. Tribology International, 2007, 40, 967-972.	3.0	8
72	Correlation analysis of symmetry breaking in the surface nanostructure ordering: case study of the ventral scale of the snake Morelia viridis. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	1.1	8

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91	“Cylindrical worlds” in biology: Does the aggregation strategy give a selective advantage?. <i>BioSystems</i> , 2019, 175, 39-46.	0.9	5
92	Loop renormalization of the Ginzburg-Landau functional in the theory of phase transitions. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1986, 68, 923-928.	0.3	4
93	The RG method applied to an exactly solvable model of phase transitions. <i>Journal of Physics A</i> , 1990, 23, 91-97.	1.6	4
94	Fine current structure and attractor behaviour in long Josephson junctions. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 183, 123-128.	0.9	4
95	“Purely” loop renormalizations of the Ginzburg-Landau-Wilson functional as a solution of the thermal conductivity equation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1987, 125, 335-338.	0.9	3
96	The scale equations in the critical dynamics of fluctuating systems. <i>Journal of Statistical Physics</i> , 1990, 58, 295-323.	0.5	3
97	Stability of localized excitations and domain growth in the vicinity of the first order phase transition. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 178, 301-309.	0.9	3
98	Phenomenological approach to construction of attractors. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1993, 94, 325-338.	0.3	3
99	Method of movable lattice particles. <i>Tribology International</i> , 2007, 40, 930-936.	3.0	3
100	Directed molecular transport in an oscillating channel with randomness. <i>Physical Review E</i> , 2008, 77, 021114.	0.8	3
101	Filippov, Vanossi, and Urbakh Reply:. <i>Physical Review Letters</i> , 2011, 107, .	2.9	3
102	The functional significance of density and distribution of outgrowths on co-opted contact pairs in biological arresting systems. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2015, 370, 20140032.	1.8	3
103	Radial arrangement of apical adhesive sites promotes contact self-alignment of fruits in <i>Commicarpus</i> plants (Nyctaginaceae). <i>Scientific Reports</i> , 2017, 7, 10956.	1.6	3
104	Fluctuation effects in the spherical model. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1986, 66, 183-190.	0.3	2
105	Fluctuation-induced phase transition of the first kind in an exactly solvable model. <i>Theoretical and Mathematical Physics(Russian Federation)</i> , 1987, 72, 786-790.	0.3	2
106	Nonlinear excitations in the critical region. <i>Journal of Statistical Physics</i> , 1993, 71, 1003-1014.	0.5	2
107	Simple model of dust medium evolution. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1994, 189, 361-366.	0.9	2
108	Phase-transition kinetics with the formation of topological defects in superconductors with a multicomponent order parameter. <i>Journal of Experimental and Theoretical Physics</i> , 1997, 85, 734-747.	0.2	2

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109	Chain ordering in molecular dynamics and kinetics. Journal of Experimental and Theoretical Physics, 1997, 85, 949-958.	0.2	2
110	Phase separation, charge ordering, and pairing in layered three-dimensional systems. Physical Review B, 2001, 63, .	1.1	2
111	From deterministic dynamics to kinetic phenomena. Physical Review E, 2004, 69, 042101.	0.8	2
112	Following Single Molecules by Force Spectroscopy. Israel Journal of Chemistry, 2004, 44, 363-372.	1.0	2
113	Actin-based motility: cooperative symmetry-breaking and phases of motion. Journal of Physics Condensed Matter, 2005, 17, S3929-S3944.	0.7	2
114	Attractor properties of physical branches of the solution to the renormalization group equation. Theoretical and Mathematical Physics(Russian Federation), 1998, 117, 1423-1433.	0.3	1
115	Fluctuating field near spinodal. Physics Letters, Section A: General, Atomic and Solid State Physics, 1998, 243, 229-235.	0.9	1
116	Bicontinuous phases in coulombic systems. The role of specific interactions. Journal of Molecular Liquids, 2000, 87, 163-175.	2.3	1
117	Two Universal Regimes of Adhesive Film Peeling. Technical Physics Letters, 2005, 31, 871.	0.2	1
118	Experimental determination of the spatial scale governing dry friction force of a steel specimen. Physical Mesomechanics, 2008, 11, 149-152.	1.0	1
119	Experience in numerically modelling the mixed state of superconductors, applied to a study of the nonstationary Schrödinger equation. Low Temperature Physics, 2010, 36, 100-104.	0.2	1
120	On the tricritical point induced by random transverse fields. Physics Letters, Section A: General, Atomic and Solid State Physics, 1986, 116, 43-44.	0.9	0
121	Threshold impurity effect on phase transitions in anisotropic systems. Phase Transitions, 1993, 45, 277-279.	0.6	0
122	A simple model of the evolution of a dust medium. Theoretical and Mathematical Physics(Russian) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	0.3	0
123	Kinetics of vortex formation in superconductors with anisotropic pairing. Physics of the Solid State, 1997, 39, 29-31.	0.2	0
124	Large-scale structure of a fluctuating field near the lability boundary of a type-I phase transition. Theoretical and Mathematical Physics(Russian Federation), 1997, 113, 1564-1571.	0.3	0
125	Ordering of interacting subsystems. Molecular dynamics. Physics of the Solid State, 1998, 40, 1546-1549.	0.2	0
126	Dynamic model of a double chain with hydrogen bonds. Journal of Experimental and Theoretical Physics, 1998, 86, 608-613.	0.2	0

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127	Magnetic flux structure and formfactor of SANS in a superconductor with multicomponent order parameter. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1999, 260, 120-125.	0.9	0
128	Magnetic-field penetration and structure of the mixed state in a superconductor with a multicomponent order parameter. <i>Physical Review B</i> , 2000, 62, 9688-9696.	1.1	0
129	Molecular pumping and separation in a symmetric channel. <i>Materials Research Society Symposia Proceedings</i> , 2003, 790, 1.	0.1	0
130	Jumplike Variation of the Contact Area between Randomly Rough Surfaces. <i>Technical Physics Letters</i> , 2005, 31, 735.	0.2	0