# A E Filippov

## List of Publications by Year in Descending Order



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|---|---|---|---|
| 130 papers | 2,481 citations | 23 h-index | 46 g-index |
| 131 ext. papers | 2,701 ext. citations | 3.5 avg, IF | 5.05 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 130 | Molecular Dynamics Study of the Evolution of Rotational Atomic Displacements in a Crystal Subjected to Shear Deformation. *Physical Mesomechanics*, **2019**, 22, 375-381 | 1.6 | 3 |
| 129 | "Cylindrical worlds" in biology: Does the aggregation strategy give a selective advantage?. *BioSystems*, **2019**, 175, 39-46 | 1.9 | 3 |
| 128 | Slow viscoelastic response of resilin. *Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology*, **2018**, 204, 409-417 | 2.3 | 13 |
| 127 | Numerical Model of the Slithering Snake Locomotion Based on the Friction Anisotropy of the Ventral Skin. *Tribology Letters*, **2018**, 66, 1 | 2.8 | 7 |
| 126 | Numerical simulation of the pattern formation of the springtail cuticle nanostructures. *Journal of the Royal Society Interface*, **2018**, 15, | 4.1 | 4 |
| 125 | Identification and Space-Time Evolution of Vortex-Like Motion of Atoms in a Loaded Solid. *Physical Mesomechanics*, **2018**, 21, 419-429 | 1.6 | 5 |
| 124 | Critical roughness in animal hairy adhesive pads: a numerical modeling approach. *Bioinspiration and Biomimetics*, **2018**, 13, 066004 | 2.6 | 8 |
| 123 | Radial arrangement of apical adhesive sites promotes contact self-alignment of fruits in Commicarpus plants (Nyctaginaceae). *Scientific Reports*, **2017**, 7, 10956 | 4.9 | 2 |
| 122 | Influence of tangential displacement on the adhesion strength of a contact between a parabolic profile and an elastic half-space. *Royal Society Open Science*, **2017**, 4, 161010 | 3.3 | 9 |
| 121 | Oil adsorption ability of three-dimensional epicuticular wax coverages in plants. *Scientific Reports*, **2017**, 7, 45483 | 4.9 | 12 |
| 120 | Numerical simulation of colloidal self-assembly of super-hydrophobic arachnid cerotegument structures. *Journal of Theoretical Biology*, **2017**, 430, 1-8 | 2.3 | 14 |
| 119 | Visualization of Wave Propagation and Fine Structure in Frictional Motion of Unconstrained Soft Microstructured Tapes. *Tribology Letters*, **2017**, 65, 1 | 2.8 | 32 |
| 118 | Effect of stress nonhomogeneity on the shear melting of a thin boundary lubrication layer. *Physical Review E*, **2016**, 94, 053002 | 2.4 | 5 |
| 117 | Stiffness gradient of the beetle penis facilitates propulsion in the spiraled female spermathecal duct. *Scientific Reports*, **2016**, 6, 27608 | 4.9 | 13 |
| 116 | Single-Molecule Tribology: Force Microscopy Manipulation of a Porphyrin Derivative on a Copper Surface. *ACS Nano*, **2016**, 10, 713-22 | 16.7 | 32 |
| 115 | Modelling of the frictional behaviour of the snake skin covered by anisotropic surface nanostructures. *Scientific Reports*, **2016**, 6, 23539 | 4.9 | 28 |
| 114 | Biological microstructures with high adhesion and friction. Numerical approach. *Physics-Uspekhi*, **2016**, 59, 829-845 | 2.8 | 10 |

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| 113 | Effects of molecule anchoring and dispersion on nanoscopic friction under electrochemical control. *Journal of Physics Condensed Matter*, **2016**, 28, 105001 | 1.8 | 5 |
| 112 | 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 | 2.6 | 7 |
| 111 | Spatial model of the gecko foot hair: functional significance of highly specialized non-uniform geometry. *Interface Focus*, **2015**, 5, 20140065 | 3.9 | 22 |
| 110 | The functional significance of density and distribution of outgrowths on co-opted contact pairs in biological arresting systems. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2015**, 370, 20140032 | 5.8 | 3 |
| 109 | Diffusion through Bifurcations in Oscillating Nano- and Microscale Contacts: Fundamentals and Applications. *Physical Review X*, **2015**, 5, | 9.1 | 11 |
| 108 | Male penile propulsion into spiraled spermathecal ducts of female chrysomelid beetles: A numerical simulation approach. *Journal of Theoretical Biology*, **2015**, 384, 140-6 | 2.3 | 15 |
| 107 | Modelling clustering of vertically aligned carbon nanotube arrays. *Interface Focus*, **2015**, 5, 20150026 | 3.9 | 8 |
| 106 | Nanoscopic friction under electrochemical control. *Physical Review Letters*, **2014**, 112, 055502 | 7.4 | 12 |
| 105 | Simplified simulation of fretting wear using the method of dimensionality reduction. *Physical Mesomechanics*, **2014**, 17, 236-241 | 1.6 | 4 |
| 104 | Fibrillar adhesion with no clusterisation: Functional significance of material gradient along adhesive setae of insects. *Beilstein Journal of Nanotechnology*, **2014**, 5, 837-45 | 3 | 42 |
| 103 | Unzipping bird feathers. *Journal of the Royal Society Interface*, **2014**, 11, 20130988 | 4.1 | 27 |
| 102 | Long-term ant-species-dependent dynamics of a myrmecochorous plant community. *Arthropod-Plant Interactions*, **2013**, 7, 277-286 | 2.2 | 4 |
| 101 | Adhesion failure at 180,000 frames per second: direct observation of the detachment process of a mushroom-shaped adhesive. *Physical Review Letters*, **2013**, 111, 104301 | 7.4 | 62 |
| 100 | Friction between a viscoelastic body and a rigid surface with random self-affine roughness. *Physical Review Letters*, **2013**, 111, 034301 | 7.4 | 33 |
| 99 | Insect wet steps: loss of fluid from insect feet adhering to a substrate. *Journal of the Royal Society Interface*, **2013**, 10, 20120639 | 4.1 | 14 |
| 98 | Li et al. reply. *Physical Review Letters*, **2013**, 111, 189402 | 7.4 | 6 |
| 97 | Frictional-anisotropy-based systems in biology: structural diversity and numerical model. *Scientific Reports*, **2013**, 3, 1240 | 4.9 | 45 |
| 96 | Bubbles induced fluctuations of some properties of aqueous solutions. *Biophysics (Russian Federation)*, **2012**, 57, 421-427 | 0.7 | 4 |

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| 95 | Normal contact between a rigid surface and a viscous body: Verification of the method of reduction of dimensionality for viscous media. *Physical Mesomechanics*, **2012**, 15, 270-274 | 1.6 | 12 |
| 94 | Modeling of the dynamic contact in stick-slip microdrives using the method of reduction of dimensionality. *Physical Mesomechanics*, **2012**, 15, 287-292 | 1.6 | 12 |
| 93 | Adhesive properties of contacts between elastic bodies with randomly rough self-affine surfaces: A simulation with the method of reduction of dimensionality. *Physical Mesomechanics*, **2012**, 15, 324-329 | 1.6 | 6 |
| 92 | Simulation of the influence of ultrasonic in-plane oscillations on dry friction accounting for stick and creep. *Physical Mesomechanics*, **2012**, 15, 330-332 | 1.6 | 10 |
| 91 | Formation and rupture of capillary bridges in atomic scale friction. *Journal of Chemical Physics*, **2012** , 137, 164706 | 3.9 | 17 |
| 90 | Normal contact stiffness of elastic solids with fractal rough surfaces for one- and three-dimensional systems. *Physical Review E*, **2012**, 86, 026710 | 2.4 | 55 |
| 89 | Shear induced adhesion: contact mechanics of biological spatula-like attachment devices. *Journal of Theoretical Biology*, **2011**, 276, 126-31 | 2.3 | 62 |
| 88 | Low friction and rotational dynamics of crystalline flakes in solid lubrication. *Europhysics Letters*, **2011**, 95, 66002 | 1.6 | 29 |
| 87 | Filippov, Vanossi, and Urbakh Reply:. *Physical Review Letters*, **2011**, 107, | 7.4 | 3 |
| 86 | Mechanism of wear and ripple formation induced by the mechanical action of an atomic force microscope tip. *Physical Review Letters*, **2011**, 106, 025502 | 7.4 | 11 |
| 85 | Origin of friction anisotropy on a quasicrystal surface. *Physical Review Letters*, **2010**, 104, 074302 | 7.4 | 23 |
| 84 | 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 | 0.7 | 1 |
| 83 | Force of friction between fractal rough surface and elastomer. *Technical Physics Letters*, **2010**, 36, 525-527 | 0.7 | 20 |
| 82 | Influence of Ultrasonic In-Plane Oscillations on Static and Sliding Friction and Intrinsic Length Scale of Dry Friction Processes. *Tribology Letters*, **2010**, 39, 25-30 | 2.8 | 72 |
| 81 | Modified Burridge–Knopoff model with state dependent friction. *Tribology International*, **2010**, 43, 1392-1399 | 1.9 | 7 |
| 80 | Rotary motors sliding along surfaces. *Physical Review E*, **2009**, 79, 021108 | 2.4 | 4 |
| 79 | Torque and twist against superlubricity. *Physical Review Letters*, **2008**, 100, 046102 | 7.4 | 152 |
| 78 | Effect of tip flexibility on stick–slip motion in friction force microscopy experiments. *Journal of Physics Condensed Matter*, **2008**, 20, 354002 | 1.8 | 17 |

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| 77 | Directed molecular transport in an oscillating channel with randomness. *Physical Review E*, **2008**, 77, 021114 | 2.4 | 2 |
| 76 | Experimental determination of the spatial scale governing dry friction force of a steel specimen. *Physical Mesomechanics*, **2008**, 11, 149-152 | 1.6 | 1 |
| 75 | Statistics of contacts and the dependence of their total length on the normal force for fractal surfaces with different Hirsch indices. *Technical Physics Letters*, **2008**, 34, 792-794 | 0.7 | 5 |
| 74 | Reconstruction of potential from dynamic experiments. *Physical Review E*, **2007**, 75, 066104 | 2.4 | 17 |
| 73 | Method of movable lattice particles. *Tribology International*, **2007**, 40, 930-936 | 4.9 | 2 |
| 72 | The effect of lateral vibrations on transport and friction in nanoscale contacts. *Tribology International*, **2007**, 40, 967-972 | 4.9 | 7 |
| 71 | Fractal Tomlinson model for mesoscopic friction: from microscopic velocity-dependent damping to macroscopic Coulomb friction. *Physical Review E*, **2007**, 75, 027103 | 2.4 | 36 |
| 70 | Flexible tissue with fibres interacting with an adhesive surface. *Journal of Physics Condensed Matter* , **2007**, 19, 096012 | 1.8 | 11 |
| 69 | To optimal elasticity of adhesives mimicking gecko foot-hairs. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2006**, 358, 309-312 | 2.3 | 7 |
| 68 | Converting displacement dynamics into creep in block media. *Technical Physics Letters*, **2006**, 32, 545-549 | 0.7 | 11 |
| 67 | Jumplike variation of the contact area between randomly rough surfaces. *Technical Physics Letters*, **2005**, 31, 735 | 0.7 | |
| 66 | A model of mechanical polishing in the presence of a lubricant. *Technical Physics Letters*, **2005**, 31, 788 | 0.7 | 6 |
| 65 | Two universal regimes of adhesive film peeling. *Technical Physics Letters*, **2005**, 31, 871 | 0.7 | 1 |
| 64 | Actin-based motility: cooperative symmetry-breaking and phases of motion. *Journal of Physics Condensed Matter*, **2005**, 17, S3929-44 | 1.8 | 2 |
| 63 | Tuning diffusion and friction in microscopic contacts by mechanical excitations. *Physical Review Letters*, **2005**, 95, 016101 | 7.4 | 53 |
| 62 | Directed molecular transport in an oscillating symmetric channel. *Physical Review E*, **2004**, 69, 011908 | 2.4 | 14 |
| 61 | From deterministic dynamics to kinetic phenomena. *Physical Review E*, **2004**, 69, 042101 | 2.4 | 0 |
| 60 | Following Single Molecules by Force Spectroscopy. *Israel Journal of Chemistry*, **2004**, 44, 363-372 | 3.4 | 2 |

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| 59 | Friction through dynamical formation and rupture of molecular bonds. *Physical Review Letters*, **2004**, 92, 135503 | 7.4 | 166 |
| 58 | Beyond the conventional description of dynamic force spectroscopy of adhesion bonds. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 11378-81 | 11.5 | 233 |
| 57 | Manipulations of Individual Molecules by Scanning Probes. *Nano Letters*, **2003**, 3, 795-798 | 11.5 | 6 |
| 56 | Molecular pumping and separation in a symmetric channel. *Materials Research Society Symposia Proceedings*, **2003**, 790, 1 | | |
| 55 | Dynamic force spectroscopy: a Fokker–Planck approach. *Chemical Physics Letters*, **2002**, 352, 499-504 | 2.5 | 86 |
| 54 | Chemical Control of Friction: Mixed Lubricant Monolayers. *Tribology Letters*, **2002**, 12, 217-227 | 2.8 | 9 |
| 53 | Inverted stick–slip friction: What is the mechanism?. *Journal of Chemical Physics*, **2002**, 116, 6871-6874 | 3.9 | 13 |
| 52 | Control of friction by shear induced phase transitions. *Physical Review B*, **2002**, 66, | 3.3 | 5 |
| 51 | Modelling of the growth of populations of Listeria monocytogenes and a bacteriocin-producing strain of Lactobacillus in pure and mixed cultures. *Food Microbiology*, **2001**, 18, 605-615 | 6 | 20 |
| 50 | Phase separation, charge ordering, and pairing in layered three-dimensional systems. *Physical Review B*, **2001**, 63, | 3.3 | 2 |
| 49 | Stochastic modelling of the growth of a microbial population under changing temperature regimes. *International Journal of Food Microbiology*, **2001**, 64, 317-23 | 5.8 | 8 |
| 48 | Confined molecules under shear: from a microscopic description to phenomenology. *Physical Review Letters*, **2001**, 87, 275506 | 7.4 | 23 |
| 47 | Bicontinuous phases in coulombic systems. The role of specific interactions. *Journal of Molecular Liquids*, **2000**, 87, 163-175 | 6 | 1 |
| 46 | Magnetic-field penetration and structure of the mixed state in a superconductor with a multicomponent order parameter. *Physical Review B*, **2000**, 62, 9688-9696 | 3.3 | |
| 45 | Structural rearrangement of solid surfaces due to competing adsorbate-substrate interactions. *Physical Review E*, **1999**, 60, 660-70 | 2.4 | 5 |
| 44 | Magnetic flux structure and formfactor of SANS in a superconductor with multicomponent order parameter. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1999**, 260, 120-125 | 2.3 | |
| 43 | Fluctuation effects at solid–liquid interfaces. *Surface Science*, **1999**, 422, L200-L205 | 1.8 | 8 |
| 42 | Ordering of interacting subsystems. Molecular dynamics. *Physics of the Solid State*, **1998**, 40, 1546-1549 | 0.8 | |

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| 41 | Dynamic model of a double chain with hydrogen bonds. *Journal of Experimental and Theoretical Physics*, **1998**, 86, 608-613 | 1 | |
| 40 | Two-component model for the growth of porous subsurface layers. *Journal of Experimental and Theoretical Physics*, **1998**, 87, 814-822 | 1 | 4 |
| 39 | Attractor properties of physical branches of the solution to the renormalization group equation. *Theoretical and Mathematical Physics(Russian Federation)*, **1998**, 117, 1423-1433 | 0.7 | 1 |
| 38 | Fluctuating field near spinodal. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1998**, 243, 229-235 | 2.3 | 0 |
| 37 | Distortion of a Substrate Induced by Adsorption at Solid-Liquid Interfaces. *Physical Review Letters*, **1998**, 81, 3904-3907 | 7.4 | 17 |
| 36 | Traffic jams and hysteresis in driven one-dimensional systems. *Physical Review E*, **1998**, 58, 1311-1324 | 2.4 | 27 |
| 35 | Phase transitions in individual sub-micrometre superconductors. *Nature*, **1997**, 390, 259-262 | 50.4 | 353 |
| 34 | Kinetics of vortex formation in superconductors with anisotropic pairing. *Physics of the Solid State*, **1997**, 39, 29-31 | 0.8 | |
| 33 | Kinetics of vortex structure formation in magnetic materials. *Journal of Experimental and Theoretical Physics*, **1997**, 84, 971-977 | 1 | 7 |
| 32 | Phase-transition kinetics with the formation of topological defects in superconductors with a multicomponent order parameter. *Journal of Experimental and Theoretical Physics*, **1997**, 85, 734-747 | 1 | 2 |
| 31 | Chain ordering in molecular dynamics and kinetics. *Journal of Experimental and Theoretical Physics*, **1997**, 85, 949-958 | 1 | 2 |
| 30 | 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 | 0.7 | |
| 29 | Kinetics of vortex formation in superconductors with d pairing. *Physical Review B*, **1996**, 54, 3504-3507 | 3.3 | 7 |
| 28 | Nonlinear nonlocal Schrödinger equation in the context of quantum mechanics. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1996**, 215, 32-39 | 2.3 | 5 |
| 27 | A simple model of the evolution of a dust medium. *Theoretical and Mathematical Physics(Russian Federation)*, **1995**, 103, 475-481 | 0.7 | |
| 26 | Large-scale structure of fluctuating order parameter field. *Journal of Statistical Physics*, **1994**, 75, 241-252 | 1.5 | 6 |
| 25 | Simple model of dust medium evolution. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1994**, 189, 361-366 | 2.3 | 2 |
| 24 | 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 | 2.3 | 8 |

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|---|---|---|---|
| 23 | Threshold impurity effect on phase transitions in anisotropic systems. *Phase Transitions*, **1993**, 45, 277-279 | 1.3 | |
| 22 | Hydrodynamic spinodal decomposition: Growth kinetics and scaling functions. *Physical Review B*, **1993**, 48, 634-637 | 3.3 | 103 |
| 21 | Fine current structure and attractor behaviour in long Josephson junctions. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1993**, 183, 123-128 | 2.3 | 4 |
| 20 | Stability of localized excitations and domain growth in the vicinity of the first order phase transition. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1993**, 178, 301-309 | 2.3 | 3 |
| 19 | Study of a local RG approximation. *Physica A: Statistical Mechanics and Its Applications*, **1993**, 192, 486-515 | 3.3 | 12 |
| 18 | Nonlinear excitations in the critical region. *Journal of Statistical Physics*, **1993**, 71, 1003-1014 | 1.5 | 2 |
| 17 | Phenomenological approach to construction of attractors. *Theoretical and Mathematical Physics(Russian Federation)*, **1993**, 94, 325-338 | 0.7 | 2 |
| 16 | On the structure of critical nuclei at first-order phase transitions in 3d systems. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1992**, 165, 159-164 | 2.3 | 13 |
| 15 | Gradient expansion based on the physical RG branch. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1992**, 169, 195-198 | 2.3 | 5 |
| 14 | On the physical branch of the exact (local) RG equation. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1991**, 158, 300-306 | 2.3 | 13 |
| 13 | The scale equations in the critical dynamics of fluctuating systems. *Journal of Statistical Physics*, **1990**, 58, 295-323 | 1.5 | 3 |
| 12 | New small RG parameter. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1990**, 150, 100-104 | 2.3 | 11 |
| 11 | The RG method applied to an exactly solvable model of phase transitions. *Journal of Physics A*, **1990** , 23, 91-97 | | 4 |
| 10 | Oxygen ordering at the structural phase transition in Y-Ba-Cu-O. *Phase Transitions*, **1990**, 22, 31-42 | 1.3 | 9 |
| 9 | Critical behaviour of orthorhombic high Tc superconducting systems with d-pairing. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1989**, 136, 171-173 | 2.3 | 5 |
| 8 | Purely loop renormalizations of the Ginzburg-Landau-Wilson functional as a solution of the thermal conductivity equation. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1987**, 125, 335-338 | 2.3 | 3 |
| 7 | Fluctuation-induced phase transition of the first kind in an exactly solvable model. *Theoretical and Mathematical Physics(Russian Federation)*, **1987**, 72, 786-790 | 0.7 | 2 |
| 6 | On the tricritical point induced by random transverse fields. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1986**, 116, 43-44 | 2.3 | |

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| 5 | Fluctuation effects in an exactly solvable model of phase transitions. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1986**, 119, 55-59 | 2.3 | 17 |
| 4 | Fluctuation effects in the spherical model. *Theoretical and Mathematical Physics(Russian Federation)* , **1986**, 66, 183-190 | 0.7 | 2 |
| 3 | Loop renormalization of the Ginzburg-Landau functional in the theory of phase transitions. *Theoretical and Mathematical Physics(Russian Federation)*, **1986**, 68, 923-928 | 0.7 | 4 |
| 2 | Critical behavior and finite volume. *Theoretical and Mathematical Physics(Russian Federation)*, **1986**, 67, 413-418 | 0.7 | 9 |
| 1 | Specific character of metamagnetic transitions in Fe2P. *Journal of Magnetism and Magnetic Materials*, **1984**, 43, 53-58 | 2.8 | 11 |