

# Valery M Uzdin

## List of Publications by Year in descending order

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130  
papers

1,589  
citations

394421

19  
h-index

377865

34  
g-index

131  
all docs

131  
docs citations

131  
times ranked

1010  
citing authors

#	ARTICLE	IF	CITATIONS
1	Method for finding mechanism and activation energy of magnetic transitions, applied to skyrmion and antivortex annihilation. Computer Physics Communications, 2015, 196, 335-347.	7.5	160
2	Lifetime of racetrack skyrmions. Scientific Reports, 2018, 8, 3433.	3.3	127
3	Mechanism and activation energy of magnetic skyrmion annihilation obtained from minimum energy path calculations. Physical Review B, 2016, 94, .	3.2	83
4	Harmonic transition-state theory of thermal spin transitions. Physical Review B, 2012, 85, .	3.2	77
5	Fe /Cr interface magnetism: Correlation between hyperfine fields and magnetic moments. Physical Review B, 2001, 63, .	3.2	47
6	Magnetic trimer on non-magnetic substrate: From frustration towards non-collinearity. Europhysics Letters, 1999, 47, 556-561.	2.0	38
7	Duplication, Collapse, and Escape of Magnetic Skyrmions Revealed Using a Systematic Saddle Point Search Method. Physical Review Letters, 2018, 121, 197202.	7.8	36
8	Effect of hydrogen on the interlayer exchange coupling in Fe/V superlattices. Physical Review B, 2000, 61, 4870-4876.	3.2	35
9	In-plane magnetization of an ultrathin film of Fe <sub>3</sub> O <sub>4</sub> (111) grown epitaxially on Pt(111). Physical Review B, 1998, 58, R11861-R11863.	3.2	34
10	Modeling of the magnetic properties of the Cr-Fe interface. Physical Review B, 1995, 52, 9477-9485.	3.2	33
11	Energy surface and lifetime of magnetic skyrmions. Journal of Magnetism and Magnetic Materials, 2018, 459, 236-240.	2.3	33
12	Size and Shape Dependence of Thermal Spin Transitions in Nanoislands. Physical Review Letters, 2013, 110, 020604.	7.8	32
13	Noncollinear Fe spin structure in (Sm-Co)/Fe exchange-spring bilayers: Layer-resolved $\langle \mathbf{m} \rangle$ and $\langle \mathbf{m} \otimes \mathbf{m} \rangle$ structure calculations. Physical Review B, 2012, 85, .	3.2	31
14	The effect of confinement and defects on the thermal stability of skyrmions. Physica B: Condensed Matter, 2018, 549, 6-9.	2.7	31
15	Periodic Anderson model for the description of noncollinear magnetic structure in low-dimensional 3d-systems. Computational Materials Science, 1998, 10, 211-216.	3.0	28
16	Real-space observation of skyrmion clusters with mutually orthogonal skyrmion tubes. Physical Review B, 2019, 100, .	3.2	28
17	Interface alloying and tunability of magnetic structure with hydrogen in Fe/V multilayers. Physical Review B, 2003, 68, .	3.2	26
18	Kondo State for a Compact Cr Trimer on a Metallic Surface. Physical Review Letters, 2002, 89, 276802.	7.8	25

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19	Remote control of the Fe magnetic moment in magnetic heterostructures. Europhysics Letters, 2007, 79, 37003.	2.0	21
20	Spin-density wave in Cr without the nesting property of the Fermi surface. Journal of Physics Condensed Matter, 2006, 18, 2717-2728.	1.8	19
21	Skyrmions in antiferromagnets: Thermal stability and the effect of external field and impurities. Journal of Applied Physics, 2020, 127, 213906.	2.5	19
22	Epitaxial growth, alloying and magnetic structure of interfaces in Fe/Cr (001) superlattices. Journal of Magnetism and Magnetic Materials, 2002, 240, 504-507.	2.3	18
23	Atomic-scale magnetic and chemical structure of Fe <sup>2+</sup> /V multilayers using Mössbauer spectroscopy. Physical Review B, 2005, 72, .	3.2	18
24	Non-collinear magnetism of Cr, Mn and Fe trimers supported on the non-magnetic metal surface. Surface Science, 2001, 482-485, 965-969.	1.9	17
25	Evolution of atomic magnetic moments in Fe/V multilayers with hydrogen loading. Journal of Magnetism and Magnetic Materials, 2002, 240, 481-484.	2.3	17
26	Calculations of magnetic states and minimum energy paths of transitions using a noncollinear extension of the Alexander-Anderson model and a magnetic force theorem. Physical Review B, 2014, 89, .	3.2	17
27	Magnetic dichroism and spin-resolved photoemission from rough interfaces. Physical Review B, 1999, 59, 1214-1222.	3.2	16
28	Magnetic and critical properties of models of magnetic superlattices. Journal of Magnetism and Magnetic Materials, 2006, 300, e546-e549.	2.3	16
29	Non-collinear structure of Cr trimer on the surface of non-magnetic metals. Computational Materials Science, 2000, 17, 441-444.	3.0	15
30	Potential Energy Surfaces and Rates of Spin Transitions. Zeitschrift Fur Physikalische Chemie, 0, , 130708000310008.	2.8	15
31	Pinhole defects in Fe/Cr trilayers. Journal of Magnetism and Magnetic Materials, 1997, 165, 458-461.	2.3	14
32	Manipulation of the short-wavelength interlayer exchange coupling in Fe/Cr multilayers via interface alloying. Physical Review B, 2002, 66, .	3.2	14
33	The magnetization reversal process in spin spring magnets. Nanotechnology, 2008, 19, 315401.	2.6	14
34	Quantum wells in trilayers: Dependence of the properties on the thickness of magnetic and nonmagnetic layers. Journal of Magnetism and Magnetic Materials, 1996, 156, 193-194.	2.3	13
35	Noncollinear magnetic structure of Fe/Cr interfaces. Journal of Magnetism and Magnetic Materials, 1999, 198-199, 471-473.	2.3	13
36	Classical to quantum mechanical tunneling mechanism crossover in thermal transitions between magnetic states. Faraday Discussions, 2016, 195, 93-109.	3.2	13

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37	Fast and robust algorithm for energy minimization of spin systems applied in an analysis of high temperature spin configurations in terms of skyrmion density. Computer Physics Communications, 2021, 260, 107749.	7.5	13
38	Bulk and surface magnetic properties of dilute FeCr alloys. Journal of Magnetism and Magnetic Materials, 1995, 146, 165-174.	2.3	12
39	Effect of hydrogen adsorption on the magnetic properties of a surface nanocluster of iron. Physical Review B, 2013, 88, .	3.2	12
40	Magnetic exchange force microscopy: theoretical analysis of induced magnetization reversals. Nanoscale, 2017, 9, 13320-13325.	5.6	12
41	Efficient optimization method for finding minimum energy paths of magnetic transitions. Journal of Physics Condensed Matter, 2020, 32, 345901.	1.8	12
42	QUANTUM SUPERSPACE, q-EXTENDED SUPERSYMMETRY AND PARASUPERSYMMETRIC QUANTUM MECHANICS. Modern Physics Letters A, 1993, 08, 2657-2670.	1.2	10
43	Atomic scale interface structure in metallic superlattices. Journal of Physics Condensed Matter, 2007, 19, 136201.	1.8	10
44	Qualitative insight and quantitative analysis of the effect of temperature on the coercivity of a magnetic system. AIP Advances, 2016, 6, 025213.	1.3	10
45	Skyrmion flop transition and congregation of mutually orthogonal skyrmions in cubic helimagnets. Journal of Physics Condensed Matter, 2020, 32, 185801.	1.8	10
46	Stability and Lifetimes of Magnetic States of Nano- and Microstructures (Brief Review). JETP Letters, 2021, 113, 801-813.	1.4	10
47	Hubbard and Anderson periodic models for the description of imperfect low-dimensional FeCr magnetic systems. Journal of Magnetism and Magnetic Materials, 1996, 156, 202-204.	2.3	9
48	Magnetic structure of nonideal FeCr interface. Computational Materials Science, 1998, 10, 255-259.	3.0	9
49	Hyperfine fields for Sn and magnetic moments in Fe/Cr/Sn/Cr multilayers. Physical Review B, 2003, 68, .	3.2	9
50	Transition from spin-density-wave to layered antiferromagnetic state induced by hydrogen as a test for the origin of spin-density waves in chromium. Physical Review B, 2009, 80, .	3.2	9
51	The effect of temperature and external field on transitions in elements of kagome spin ice. New Journal of Physics, 2017, 19, 113008.	2.9	9
52	Stability of long-lived antiskyrmions in the Mn-Pt-Sn tetragonal Heusler material. Physical Review B, 2020, 102, .	3.2	9
53	The lifetime of micron scale topological chiral magnetic states with atomic resolution. Computer Physics Communications, 2021, 269, 108136.	7.5	9
54	Truncated minimum energy path method for finding first order saddle points. Nanosystems: Physics, Chemistry, Mathematics, 2017, , 586-595.	0.4	9

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55	Features of the magnetic state of the layered Fe-V nanostructure of the superconductor-ferromagnet type. Crystallography Reports, 2007, 52, 381-386.	0.6	8
56	Separation of the diffuse contribution to the specular x-ray scattering of multilayer films. Physical Review B, 2010, 82, .	3.2	8
57	Manipulation by exchange coupling in layered magnetic structures. Journal of Applied Physics, 2014, 115, 053913.	2.5	8
58	Topological Hall effect for electron scattering on nanoscale skyrmions in external magnetic field. Physical Review B, 2018, 98, .	3.2	8
59	Generalized supersymmetry and new topological indexes for quantum GSQM- and ESQM-Hamiltonians. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 169, 422-426.	2.1	7
60	Note on the physical sense of quantum group particles. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 174, 179-181.	2.1	7
61	Noncollinear magnetism of Fe/Cr films and multilayers. Journal of Magnetism and Magnetic Materials, 1999, 196-197, 70-72.	2.3	7
62	Epitaxial growth regims and correlations between magnetic and chemical structures. Computational Materials Science, 2002, 24, 186-191.	3.0	7
63	Information on in- and out-of-plane correlated roughness in multilayers from x-ray specular reflectivity. Journal Physics D: Applied Physics, 2008, 41, 115401.	2.8	7
64	Stability of in-plane and out-of-plane chiral skyrmions in epitaxial MnSi(111)/Si(111) thin films: Surface twists versus easy-plane anisotropy. Physical Review B, 2020, 102, .	3.2	7
65	Quantum group particles and parastatistical excitations. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 169, 427-432.	2.1	6
66	Investigation of critical phenomena of the hard/soft magnetic bilayer model by the Monte-Carlo method. Journal of Alloys and Compounds, 2016, 678, 167-170.	5.5	6
67	Energy surface and minimum energy paths for Fr�edericksz transitions in bistable cholesteric liquid crystals. Physical Review E, 2016, 93, 042708.	2.1	6
68	Magnetic skyrmion annihilation by quantum mechanical tunneling. New Journal of Physics, 2020, 22, 083013.	2.9	6
69	Fe clusters near the surface and interface in the FeCr systems. Journal of Magnetism and Magnetic Materials, 1997, 172, 110-118.	2.3	5
70	Fe/Cr interface magnetism in the external magnetic field. Journal of Magnetism and Magnetic Materials, 1999, 203, 280-282.	2.3	5
71	Interface defects and formation of non-collinear magnetic ordering in Fe/Cr multilayers. Computational Materials Science, 2000, 17, 468-472.	3.0	5
72	A drop of hyperfine field at Sn in Fe/Cr/Sn/Cr multilayers. Journal of Magnetism and Magnetic Materials, 2006, 300, 351-357.	2.3	5

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73	Electronic transport in the multilayers with very thin magnetic layers. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 36, 12-16.	2.7	5
74	Electronic structure investigation of the exchange-spring behavior during the magnetic reversal process. Physical Review B, 2008, 77, .	3.2	5
75	Multiple minimum-energy paths and scenarios of unwinding transitions in chiral nematic liquid crystals. Physical Review E, 2019, 100, 062704.	2.1	5
76	Lifetime of skyrmions in discrete systems with infinitesimal lattice constant. Journal of Magnetism and Magnetic Materials, 2022, 549, 168974.	2.3	5
77	Thermodynamic properties of itinerant electrons in magnetic superlattices: Magnetic coupling and magnetoresistance. Journal of Magnetism and Magnetic Materials, 1994, 138, 287-293.	2.3	4
78	Structure of Cr overlayers on Fe surfaces: a new approach for the interpretation of spin-resolved photoemission and magnetic dichroism spectra. Journal of Magnetism and Magnetic Materials, 1999, 198-199, 680-682.	2.3	4
79	Study of magnetization of a bilayer nanoststructure CoCu/Co (GF/F) by polarized neutron reflectometry. Journal of Physics: Conference Series, 2012, 340, 012085.	0.4	4
80	Template assisted self-assembly of iron oxide nanoparticles: An x-ray structural analysis. Journal of Applied Physics, 2014, 115, 054104.	2.5	4
81	Calculations of the onset temperature for tunneling in multispin systems. Nanosystems: Physics, Chemistry, Mathematics, 2017, , 454-461.	0.4	4
82	Topological structures in chiral media: Effects of confined geometry. Physical Review E, 2022, 105, 034701.	2.1	4
83	Optimal protocol for spin-orbit torque switching of a perpendicular nanomagnet. Physical Review B, 2022, 105, .	3.2	4
84	Quantum well mechanism for giant magnetoresistance in trilayer. Journal of Magnetism and Magnetic Materials, 1997, 165, 370-372.	2.3	3
85	Phase shift of exchange coupling oscilations in magnetic multilayers. Journal of Magnetism and Magnetic Materials, 1999, 203, 283-285.	2.3	3
86	Distribution of magnetic moments and hyperfine fields for Fe/Cr multilayers with different interface roughness. Computational Materials Science, 2000, 17, 477-482.	3.0	3
87	Magnetism of Cr surface defects. Computational and Theoretical Chemistry, 2006, 777, 29-33.	1.5	3
88	Response of Mn overlayers on Fe to external magnetic fields: Electronic structure calculations. Surface Science, 2009, 603, 2537-2543.	1.9	3
89	Investigating phase transitions in a model Fe/V magnetic superlattice. Bulletin of the Russian Academy of Sciences: Physics, 2010, 74, 1446-1448.	0.6	3
90	Hysteresis and Fr�edericksz thresholds for twisted states in chiral nematic liquid crystals: Minimum-energy path approach. Journal of Molecular Liquids, 2021, 325, 115242.	4.9	3

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91	Magnetic properties of the Hubbard model for finite temperatures. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 166, 77-83.	2.1	2
92	Generalized algebras of supersymmetric quantum mechanics. Theoretical and Mathematical Physics(Russian Federation), 1993, 94, 294-299.	0.9	2
93	Exchange coupling in the complex magnetic multilayers. Europhysics Letters, 1996, 34, 629-634.	2.0	2
94	Interface alloying in the metallic magnetic heterostructures with BCC lattice. Journal of Magnetism and Magnetic Materials, 2002, 240, 398-400.	2.3	2
95	The Role of Intermixing in the Phase Determination of the Interlayer Exchange Coupling in Multilayers: Application to Fe-Cr Superlattices. Phase Transitions, 2003, 76, 377-383.	1.3	2
96	Magnetization reversal process at atomic scale in systems with itinerant electrons. Journal of Physics Condensed Matter, 2012, 24, 176002.	1.8	2
97	Noncollinear magnetic ordering in a magnetic dimer supported on a metallic substrate. Bulletin of the Russian Academy of Sciences: Physics, 2013, 77, 56-59.	0.6	2
98	Instantons describing tunneling between magnetic states at finite temperature. Nanosystems: Physics, Chemistry, Mathematics, 2017, , 746-759.	0.4	2
99	Fully self-consistent calculations of magnetic structure within non-collinear Alexander-Anderson model. Nanosystems: Physics, Chemistry, Mathematics, 2020, 11, 65-77.	0.4	2
100	Interface alloying and magnetic ordering formation in multilayers. Computational Materials Science, 2002, 24, 199-202.	3.0	1
101	Effect of the interface structure in multilayered systems on x-ray specular scattering spectra. Physics of the Solid State, 2006, 48, 155-163.	0.6	1
102	Effect of bidimensional Fe clusters on magnetic properties of Fe/Cr superlattices. Journal of Magnetism and Magnetic Materials, 2008, 320, 292-298.	2.3	1
103	Evolution of the electronic density of Ni d-states in Ti-Ni alloys with a change in the concentration of the components. Physics of the Solid State, 2013, 55, 1364-1367.	0.6	1
104	Magnetic-state control in a 3d dimer on a metallic substrate. Journal of Surface Investigation, 2015, 9, 540-545.	0.5	1
105	Crossover temperature for quantum tunnelling in spin systems. Journal of Physics: Conference Series, 2016, 741, 012183.	0.4	1
106	Thermal stability of magnetic states in submicron magnetic islands. Nanosystems: Physics, Chemistry, Mathematics, 2017, , 572-578.	0.4	1
107	Nonmagnetic impurities in skyrmion racetrack memory. Nanosystems: Physics, Chemistry, Mathematics, 2020, 11, 628-635.	0.4	1
108	Spectral representation of nonequilibrium Green's functions in the Kadanoff-Baym technique. Theoretical and Mathematical Physics(Russian Federation), 1990, 84, 773-776.	0.9	0

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109	The low temperature thermomagnetic properties of thin films in high magnetic fields. Thin Solid Films, 1991, 202, 21-28.	1.8	0
110	Interaction of impurities in the Anderson model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 169, 469-474.	2.1	0
111	Supersymmetry and acoustic problems. Theoretical and Mathematical Physics(Russian Federation), 1992, 90, 277-280.	0.9	0
112	Quantum-well states in magnetic multilayers and non-Poisson islands formation during epitaxial growth. Journal of Magnetism and Magnetic Materials, 1999, 196-197, 85-87.	2.3	0
113	Spin polarized electron spectroscopy of thin vanadium films on a (110)FeNi <sub>3</sub> surface. Technical Physics Letters, 2004, 30, 284-286.	0.7	0
114	The Investigation of the Magnetic Properties of Metallic Multilayers by Angle Dependent Mössbauer Spectroscopy. Hyperfine Interactions, 2004, 156/157, 643-647.	0.5	0
115	Mössbauer spectroscopy and the structure of interfaces on the atomic scale in metallic nanosystems. Physics of Metals and Metallography, 2007, 104, 326-334.	1.0	0
116	Intermixing during epitaxial growth and Mössbauer spectroscopy with probe layers. Hyperfine Interactions, 2007, 169, 1379-1382.	0.5	0
117	Effect of the interface roughness in multilayer systems on x-ray scattering spectra. Physics of the Solid State, 2008, 50, 353-359.	0.6	0
118	Investigation of Magnetic and Thermal Properties of Model Fe/V Superlattices. Solid State Phenomena, 2009, 152-153, 551-554.	0.3	0
119	Layer-heterogeneous magnetic states in metallic nanosystems. Physics of the Solid State, 2009, 51, 150-155.	0.6	0
120	Diffuse contribution to specular spectra and the specular contribution to diffuse spectra in X-ray scattering from rough interfaces. Physics of the Solid State, 2009, 51, 1923-1928.	0.6	0
121	Tip-surface interaction and rate of magnetic transitions. Journal of Physics: Conference Series, 2016, 741, 012184.	0.4	0
122	Rate of thermal transitions in kagome spin ice. Journal of Physics: Conference Series, 2016, 741, 012182.	0.4	0
123	Energy surface and transition rates in a hexagonal element of spin ice. Journal of Physics: Conference Series, 2017, 903, 012006.	0.4	0
124	The Investigation of the Magnetic Properties of Metallic Multilayers by Angle Dependent Mössbauer Spectroscopy. , 2004, , 643-647.		0
125	Intermixing during epitaxial growth and Mössbauer spectroscopy with probe layers. , 2007, , 1379-1382.		0
126	10.1007/s11451-008-2022-z. , 2010, 50, 353.		0



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127	Calculations of switching field and energy barrier for magnetic islands with perpendicular anisotropy. Nanosystems: Physics, Chemistry, Mathematics, 2017, , 701-708.	0.4	0
128	Models of the energy landscape for an element of shakti spin ice. Nanosystems: Physics, Chemistry, Mathematics, 2018, 9, 711-715.	0.4	0
129	Demagnetizing fields in chiral magnetic structures. Nanosystems: Physics, Chemistry, Mathematics, 2020, 11, 401-407.	0.4	0
130	Fine energy structure of a magnetic skyrmion localized on a nonmagnetic impurity in an external magnetic field. Physics of Complex Systems, 2020, 1, 165-168.	0.2	0