

Valery M Uzdin

List of Publications by Year in descending order

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130
papers

1,589
citations

394286

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34
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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. | 3.0 | 160 |
| 2 | Lifetime of racetrack skyrmions. Scientific Reports, 2018, 8, 3433. | 1.6 | 127 |
| 3 | Mechanism and activation energy of magnetic skyrmion annihilation obtained from minimum energy path calculations. Physical Review B, 2016, 94, . | 1.1 | 83 |
| 4 | Harmonic transition-state theory of thermal spin transitions. Physical Review B, 2012, 85, . | 1.1 | 77 |
| 5 | Fe /Cr interface magnetism: Correlation between hyperfine fields and magnetic moments. Physical Review B, 2001, 63, . | 1.1 | 47 |
| 6 | Magnetic trimer on non-magnetic substrate: From frustration towards non-collinearity. Europhysics Letters, 1999, 47, 556-561. | 0.7 | 38 |
| 7 | Duplication, Collapse, and Escape of Magnetic Skyrmions Revealed Using a Systematic Saddle Point Search Method. Physical Review Letters, 2018, 121, 197202. | 2.9 | 36 |
| 8 | Effect of hydrogen on the interlayer exchange coupling in Fe/V superlattices. Physical Review B, 2000, 61, 4870-4876. | 1.1 | 35 |
| 9 | In-plane magnetization of an ultrathin film of Fe ₃ O ₄ (111) grown epitaxially on Pt(111). Physical Review B, 1998, 58, R11861-R11863. | 1.1 | 34 |
| 10 | Modeling of the magnetic properties of the Cr-Fe interface. Physical Review B, 1995, 52, 9477-9485. | 1.1 | 33 |
| 11 | Energy surface and lifetime of magnetic skyrmions. Journal of Magnetism and Magnetic Materials, 2018, 459, 236-240. | 1.0 | 33 |
| 12 | Size and Shape Dependence of Thermal Spin Transitions in Nanoislands. Physical Review Letters, 2013, 110, 020604. | 2.9 | 32 |
| 13 | Noncollinear Fe spin structure in (Sm-Co)/Fe exchange-spring bilayers: Layer-resolved μ -SR spectroscopy and electronic structure calculations. Physical Review B, 2012, 85, . | 1.1 | 31 |
| 14 | The effect of confinement and defects on the thermal stability of skyrmions. Physica B: Condensed Matter, 2018, 549, 6-9. | 1.3 | 31 |
| 15 | Periodic Anderson model for the description of noncollinear magnetic structure in low-dimensional 3d-systems. Computational Materials Science, 1998, 10, 211-216. | 1.4 | 28 |
| 16 | Real-space observation of skyrmion clusters with mutually orthogonal skyrmion tubes. Physical Review B, 2019, 100, . | 1.1 | 28 |
| 17 | Interface alloying and tunability of magnetic structure with hydrogen in Fe/V multilayers. Physical Review B, 2003, 68, . | 1.1 | 26 |
| 18 | Kondo State for a Compact Cr Trimer on a Metallic Surface. Physical Review Letters, 2002, 89, 276802. | 2.9 | 25 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 19 | Remote control of the Fe magnetic moment in magnetic heterostructures. Europhysics Letters, 2007, 79, 37003. | 0.7 | 21 |
| 20 | Spin-density wave in Cr without the nesting property of the Fermi surface. Journal of Physics Condensed Matter, 2006, 18, 2717-2728. | 0.7 | 19 |
| 21 | Skyrmions in antiferromagnets: Thermal stability and the effect of external field and impurities. Journal of Applied Physics, 2020, 127, 213906. | 1.1 | 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. | 1.0 | 18 |
| 23 | Atomic-scale magnetic and chemical structure of Fe/V multilayers using Mössbauer spectroscopy. Physical Review B, 2005, 72, . | 1.1 | 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. | 0.8 | 17 |
| 25 | Evolution of atomic magnetic moments in Fe/V multilayers with hydrogen loading. Journal of Magnetism and Magnetic Materials, 2002, 240, 481-484. | 1.0 | 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, . | 1.1 | 17 |
| 27 | Magnetic dichroism and spin-resolved photoemission from rough interfaces. Physical Review B, 1999, 59, 1214-1222. | 1.1 | 16 |
| 28 | Magnetic and critical properties of models of magnetic superlattices. Journal of Magnetism and Magnetic Materials, 2006, 300, e546-e549. | 1.0 | 16 |
| 29 | Non-collinear structure of Cr trimer on the surface of non-magnetic metals. Computational Materials Science, 2000, 17, 441-444. | 1.4 | 15 |
| 30 | Potential Energy Surfaces and Rates of Spin Transitions. Zeitschrift Fur Physikalische Chemie, 0, , 130708000310008. | 1.4 | 15 |
| 31 | Pinhole defects in Fe/Cr trilayers. Journal of Magnetism and Magnetic Materials, 1997, 165, 458-461. | 1.0 | 14 |
| 32 | Manipulation of the short-wavelength interlayer exchange coupling in Fe/Cr multilayers via interface alloying. Physical Review B, 2002, 66, . | 1.1 | 14 |
| 33 | The magnetization reversal process in spin spring magnets. Nanotechnology, 2008, 19, 315401. | 1.3 | 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. | 1.0 | 13 |
| 35 | Noncollinear magnetic structure of Fe/Cr interfaces. Journal of Magnetism and Magnetic Materials, 1999, 198-199, 471-473. | 1.0 | 13 |
| 36 | Classical to quantum mechanical tunneling mechanism crossover in thermal transitions between magnetic states. Faraday Discussions, 2016, 195, 93-109. | 1.6 | 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. <i>Computer Physics Communications</i> , 2021, 260, 107749. | 3.0 | 13 |
| 38 | Bulk and surface magnetic properties of dilute FeCr alloys. <i>Journal of Magnetism and Magnetic Materials</i> , 1995, 146, 165-174. | 1.0 | 12 |
| 39 | Effect of hydrogen adsorption on the magnetic properties of a surface nanocluster of iron. <i>Physical Review B</i> , 2013, 88, . | 1.1 | 12 |
| 40 | Magnetic exchange force microscopy: theoretical analysis of induced magnetization reversals. <i>Nanoscale</i> , 2017, 9, 13320-13325. | 2.8 | 12 |
| 41 | Efficient optimization method for finding minimum energy paths of magnetic transitions. <i>Journal of Physics Condensed Matter</i> , 2020, 32, 345901. | 0.7 | 12 |
| 42 | QUANTUM SUPERSPACE, q-EXTENDED SUPERSYMMETRY AND PARASUPERSYMMETRIC QUANTUM MECHANICS. <i>Modern Physics Letters A</i> , 1993, 08, 2657-2670. | 0.5 | 10 |
| 43 | Atomic scale interface structure in metallic superlattices. <i>Journal of Physics Condensed Matter</i> , 2007, 19, 136201. | 0.7 | 10 |
| 44 | Qualitative insight and quantitative analysis of the effect of temperature on the coercivity of a magnetic system. <i>AIP Advances</i> , 2016, 6, 025213. | 0.6 | 10 |
| 45 | Skyrmion flop transition and congregation of mutually orthogonal skyrmions in cubic helimagnets. <i>Journal of Physics Condensed Matter</i> , 2020, 32, 185801. | 0.7 | 10 |
| 46 | Stability and Lifetimes of Magnetic States of Nano- and Microstructures (Brief Review). <i>JETP Letters</i> , 2021, 113, 801-813. | 0.4 | 10 |
| 47 | Hubbard and Anderson periodic models for the description of imperfect low-dimensional FeCr magnetic systems. <i>Journal of Magnetism and Magnetic Materials</i> , 1996, 156, 202-204. | 1.0 | 9 |
| 48 | Magnetic structure of nonideal FeCr interface. <i>Computational Materials Science</i> , 1998, 10, 255-259. | 1.4 | 9 |
| 49 | Hyperfine fields for Sn and magnetic moments in Fe/Cr/Sn/Cr multilayers. <i>Physical Review B</i> , 2003, 68, . | 1.1 | 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. <i>Physical Review B</i> , 2009, 80, . | 1.1 | 9 |
| 51 | The effect of temperature and external field on transitions in elements of kagome spin ice. <i>New Journal of Physics</i> , 2017, 19, 113008. | 1.2 | 9 |
| 52 | Stability of long-lived antiskyrmions in the Mn-Pt-Sn tetragonal Heusler material. <i>Physical Review B</i> , 2020, 102, . | 1.1 | 9 |
| 53 | The lifetime of micron scale topological chiral magnetic states with atomic resolution. <i>Computer Physics Communications</i> , 2021, 269, 108136. | 3.0 | 9 |
| 54 | Truncated minimum energy path method for finding first order saddle points. <i>Nanosystems: Physics, Chemistry, Mathematics</i> , 2017, , 586-595. | 0.2 | 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. | 0.1 | 8 |
| 56 | Separation of the diffuse contribution to the specular x-ray scattering of multilayer films. Physical Review B, 2010, 82, . | 1.1 | 8 |
| 57 | Manipulation by exchange coupling in layered magnetic structures. Journal of Applied Physics, 2014, 115, 053913. | 1.1 | 8 |
| 58 | Topological Hall effect for electron scattering on nanoscale skyrmions in external magnetic field. Physical Review B, 2018, 98, . | 1.1 | 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. | 0.9 | 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. | 0.9 | 7 |
| 61 | Noncollinear magnetism of Fe/Cr films and multilayers. Journal of Magnetism and Magnetic Materials, 1999, 196-197, 70-72. | 1.0 | 7 |
| 62 | Epitaxial growth regims and correlations between magnetic and chemical structures. Computational Materials Science, 2002, 24, 186-191. | 1.4 | 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. | 1.3 | 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, . | 1.1 | 7 |
| 65 | Quantum group particles and parastatistical excitations. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 169, 427-432. | 0.9 | 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. | 2.8 | 6 |
| 67 | Energy surface and minimum energy paths for FrÄ©edericksz transitions in bistable cholesteric liquid crystals. Physical Review E, 2016, 93, 042708. | 0.8 | 6 |
| 68 | Magnetic skyrmion annihilation by quantum mechanical tunneling. New Journal of Physics, 2020, 22, 083013. | 1.2 | 6 |
| 69 | Fe clusters near the surface and interface in the FeCr systems. Journal of Magnetism and Magnetic Materials, 1997, 172, 110-118. | 1.0 | 5 |
| 70 | Fe/Cr interface magnetism in the external magnetic field. Journal of Magnetism and Magnetic Materials, 1999, 203, 280-282. | 1.0 | 5 |
| 71 | Interface defects and formation of non-collinear magnetic ordering in Fe/Cr multilayers. Computational Materials Science, 2000, 17, 468-472. | 1.4 | 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. | 1.0 | 5 |

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| 73 | Electronic transport in the multilayers with very thin magnetic layers. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2007, 36, 12-16. | 1.3 | 5 |
| 74 | Electronic structure investigation of the exchange-spring behavior during the magnetic reversal process. <i>Physical Review B</i> , 2008, 77, . | 1.1 | 5 |
| 75 | Multiple minimum-energy paths and scenarios of unwinding transitions in chiral nematic liquid crystals. <i>Physical Review E</i> , 2019, 100, 062704. | 0.8 | 5 |
| 76 | Lifetime of skyrmions in discrete systems with infinitesimal lattice constant. <i>Journal of Magnetism and Magnetic Materials</i> , 2022, 549, 168974. | 1.0 | 5 |
| 77 | Thermodynamic properties of itinerant electrons in magnetic superlattices: Magnetic coupling and magnetoresistance. <i>Journal of Magnetism and Magnetic Materials</i> , 1994, 138, 287-293. | 1.0 | 4 |
| 78 | Structure of Cr overlayers on Fe surfaces: a new approach for the interpretation of spin-resolved photoemission and magnetic dichroism spectra. <i>Journal of Magnetism and Magnetic Materials</i> , 1999, 198-199, 680-682. | 1.0 | 4 |
| 79 | Study of magnetization of a bilayer nanoststructure CoCu/Co (GF/F) by polarized neutron reflectometry. <i>Journal of Physics: Conference Series</i> , 2012, 340, 012085. | 0.3 | 4 |
| 80 | Template assisted self-assembly of iron oxide nanoparticles: An x-ray structural analysis. <i>Journal of Applied Physics</i> , 2014, 115, 054104. | 1.1 | 4 |
| 81 | Calculations of the onset temperature for tunneling in multispin systems. <i>Nanosystems: Physics, Chemistry, Mathematics</i> , 2017, , 454-461. | 0.2 | 4 |
| 82 | Topological structures in chiral media: Effects of confined geometry. <i>Physical Review E</i> , 2022, 105, 034701. | 0.8 | 4 |
| 83 | Optimal protocol for spin-orbit torque switching of a perpendicular nanomagnet. <i>Physical Review B</i> , 2022, 105, . | 1.1 | 4 |
| 84 | Quantum well mechanism for giant magnetoresistance in trilayer. <i>Journal of Magnetism and Magnetic Materials</i> , 1997, 165, 370-372. | 1.0 | 3 |
| 85 | Phase shift of exchange coupling oscilations in magnetic multilayers. <i>Journal of Magnetism and Magnetic Materials</i> , 1999, 203, 283-285. | 1.0 | 3 |
| 86 | Distribution of magnetic moments and hyperfine fields for Fe/Cr multilayers with different interface roughness. <i>Computational Materials Science</i> , 2000, 17, 477-482. | 1.4 | 3 |
| 87 | Magnetism of Cr surface defects. <i>Computational and Theoretical Chemistry</i> , 2006, 777, 29-33. | 1.5 | 3 |
| 88 | Response of Mn overlayers on Fe to external magnetic fields: Electronic structure calculations. <i>Surface Science</i> , 2009, 603, 2537-2543. | 0.8 | 3 |
| 89 | Investigating phase transitions in a model Fe/V magnetic superlattice. <i>Bulletin of the Russian Academy of Sciences: Physics</i> , 2010, 74, 1446-1448. | 0.1 | 3 |
| 90 | Hysteresis and Fréedericksz thresholds for twisted states in chiral nematic liquid crystals: Minimum-energy path approach. <i>Journal of Molecular Liquids</i> , 2021, 325, 115242. | 2.3 | 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. | 0.9 | 2 |
| 92 | Generalized algebras of supersymmetric quantum mechanics. Theoretical and Mathematical Physics(Russian Federation), 1993, 94, 294-299. | 0.3 | 2 |
| 93 | Exchange coupling in the complex magnetic multilayers. Europhysics Letters, 1996, 34, 629-634. | 0.7 | 2 |
| 94 | Interface alloying in the metallic magnetic heterostructures with BCC lattice. Journal of Magnetism and Magnetic Materials, 2002, 240, 398-400. | 1.0 | 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. | 0.6 | 2 |
| 96 | Magnetization reversal process at atomic scale in systems with itinerant electrons. Journal of Physics Condensed Matter, 2012, 24, 176002. | 0.7 | 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. | 0.1 | 2 |
| 98 | Instantons describing tunneling between magnetic states at finite temperature. Nanosystems: Physics, Chemistry, Mathematics, 2017, , 746-759. | 0.2 | 2 |
| 99 | Fully self-consistent calculations of magnetic structure within non-collinear Alexander-Anderson model. Nanosystems: Physics, Chemistry, Mathematics, 2020, 11, 65-77. | 0.2 | 2 |
| 100 | Interface alloying and magnetic ordering formation in multilayers. Computational Materials Science, 2002, 24, 199-202. | 1.4 | 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. | 0.2 | 1 |
| 102 | Effect of bidimensional Fe clusters on magnetic properties of Fe/Cr superlattices. Journal of Magnetism and Magnetic Materials, 2008, 320, 292-298. | 1.0 | 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. | 0.2 | 1 |
| 104 | Magnetic-state control in a 3d dimer on a metallic substrate. Journal of Surface Investigation, 2015, 9, 540-545. | 0.1 | 1 |
| 105 | Crossover temperature for quantum tunnelling in spin systems. Journal of Physics: Conference Series, 2016, 741, 012183. | 0.3 | 1 |
| 106 | Thermal stability of magnetic states in submicron magnetic islands. Nanosystems: Physics, Chemistry, Mathematics, 2017, , 572-578. | 0.2 | 1 |
| 107 | Nonmagnetic impurities in skyrmion racetrack memory. Nanosystems: Physics, Chemistry, Mathematics, 2020, 11, 628-635. | 0.2 | 1 |
| 108 | Spectral representation of nonequilibrium Green's functions in the Kadanoff-Baym technique. Theoretical and Mathematical Physics(Russian Federation), 1990, 84, 773-776. | 0.3 | 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. | 0.8 | 0 |
| 110 | Interaction of impurities in the Anderson model. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 169, 469-474. | 0.9 | 0 |
| 111 | Supersymmetry and acoustic problems. Theoretical and Mathematical Physics(Russian Federation), 1992, 90, 277-280. | 0.3 | 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. | 1.0 | 0 |
| 113 | Spin polarized electron spectroscopy of thin vanadium films on a (110)FeNi ₃ surface. Technical Physics Letters, 2004, 30, 284-286. | 0.2 | 0 |
| 114 | The Investigation of the Magnetic Properties of Metallic Multilayers by Angle Dependent Mössbauer Spectroscopy. Hyperfine Interactions, 2004, 156/157, 643-647. | 0.2 | 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. | 0.3 | 0 |
| 116 | Intermixing during epitaxial growth and Mössbauer spectroscopy with probe layers. Hyperfine Interactions, 2007, 169, 1379-1382. | 0.2 | 0 |
| 117 | Effect of the interface roughness in multilayer systems on x-ray scattering spectra. Physics of the Solid State, 2008, 50, 353-359. | 0.2 | 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. | 0.2 | 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. | 0.2 | 0 |
| 121 | Tip-surface interaction and rate of magnetic transitions. Journal of Physics: Conference Series, 2016, 741, 012184. | 0.3 | 0 |
| 122 | Rate of thermal transitions in kagome spin ice. Journal of Physics: Conference Series, 2016, 741, 012182. | 0.3 | 0 |
| 123 | Energy surface and transition rates in a hexagonal element of spin ice. Journal of Physics: Conference Series, 2017, 903, 012006. | 0.3 | 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. <i>Nanosystems: Physics, Chemistry, Mathematics</i> , 2017, , 701-708. | 0.2 | 0 |
| 128 | Models of the energy landscape for an element of shakti spin ice. <i>Nanosystems: Physics, Chemistry, Mathematics</i> , 2018, 9, 711-715. | 0.2 | 0 |
| 129 | Demagnetizing fields in chiral magnetic structures. <i>Nanosystems: Physics, Chemistry, Mathematics</i> , 2020, 11, 401-407. | 0.2 | 0 |
| 130 | Fine energy structure of a magnetic skyrmion localized on a nonmagnetic impurity in an external magnetic field. <i>Physics of Complex Systems</i> , 2020, 1, 165-168. | 0.2 | 0 |