

Rodion Stepanov

List of Publications by Year in descending order

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107
papers

1,776
citations

218677

26
h-index

315739

38
g-index

108
all docs

108
docs citations

108
times ranked

966
citing authors

#	ARTICLE	IF	CITATIONS
1	Shell models of magnetohydrodynamic turbulence. <i>Physics Reports</i> , 2013, 523, 1-60.	25.6	111
2	Structures in the rotation measure sky. <i>Monthly Notices of the Royal Astronomical Society</i> , 2001, 325, 649-664.	4.4	84
3	Non-Kolmogorov cascade of helicity-driven turbulence. <i>Physical Review E</i> , 2015, 92, 031004.	2.1	67
4	Mean electromotive force due to turbulence of a conducting fluid in the presence of mean flow. <i>Physical Review E</i> , 2006, 73, 056311.	2.1	64
5	Hindered Energy Cascade in Highly Helical Isotropic Turbulence. <i>Physical Review Letters</i> , 2015, 115, 234501.	7.8	64
6	Analysis of spiral arms using anisotropic wavelets: gas, dust and magnetic fields in M51. <i>Astronomy and Astrophysics</i> , 2006, 458, 441-452.	5.1	62
7	Energy Spectra and Fluxes in Dissipation Range of Turbulent and Laminar Flows. <i>Fluid Dynamics</i> , 2018, 53, 862-873.	0.9	53
8	COMPARISON OF ALGORITHMS FOR DETERMINATION OF ROTATION MEASURE AND FARADAY STRUCTURE. I. 1100–1400 MHz. <i>Astronomical Journal</i> , 2015, 149, 60.	4.7	48
9	Direct Numerical Simulation of Homogeneous Isotropic Helical Turbulence with the TARANG Code. <i>Journal of Applied Mechanics and Technical Physics</i> , 2018, 59, 1279-1287.	0.5	48
10	Magnetic field structures of galaxies derived from analysis of Faraday rotation measures, and perspectives for the SKA. <i>Astronomy and Astrophysics</i> , 2008, 480, 45-59.	5.1	45
11	Induction, helicity, and alpha effect in a toroidal screw flow of liquid gallium. <i>Physical Review E</i> , 2006, 73, 046310.	2.1	43
12	Faraday rotation measure synthesis for magnetic fields of galaxies. <i>Monthly Notices of the Royal Astronomical Society</i> , 2011, 414, 2540-2549.	4.4	43
13	Recognizing magnetic structures by present and future radio telescopes with Faraday rotation measure synthesis. <i>Astronomy and Astrophysics</i> , 2012, 543, A113.	5.1	40
14	Kinematic dynamo in a tetrahedron of Fourier modes. <i>Fluid Dynamics Research</i> , 2018, 50, 051409.	1.3	39
15	Fully developed turbulent dynamo at low magnetic Prandtl numbers. <i>Journal of Turbulence</i> , 2006, 7, N39.	1.4	37
16	Wavelet-based Faraday rotation measure synthesis. <i>Monthly Notices of the Royal Astronomical Society: Letters</i> , 2010, 401, L24-L28.	3.3	37
17	Dynamos: from an astrophysical model to laboratory experiments. <i>Physics-Uspexhi</i> , 2014, 57, 292-311.	2.2	36
18	A non-local shell model of hydrodynamic and magnetohydrodynamic turbulence. <i>New Journal of Physics</i> , 2007, 9, 294-294.	2.9	34

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19	Multiscale magnetic fields in spiral galaxies: evolution and reversals. <i>Astronomy and Astrophysics</i> , 2012, 537, A68.	5.1	33
20	The relation between magnetic and material arms in models for spiral galaxies. <i>Astronomy and Astrophysics</i> , 2013, 556, A147.	5.1	32
21	Non-stationary screw flow in a toroidal channel: way to a laboratory dynamo experiment. <i>Magnetohydrodynamics</i> , 2002, 38, 143-162.	0.3	32
22	Magnetic and gaseous spiral arms in M83. <i>Astronomy and Astrophysics</i> , 2016, 585, A21.	5.1	31
23	An observational test for correlations between cosmic rays and magnetic fields. <i>Monthly Notices of the Royal Astronomical Society</i> , 2014, 437, 2201-2216.	4.4	29
24	Direct Measurement of Effective Magnetic Diffusivity in Turbulent Flow of Liquid Sodium. <i>Physical Review Letters</i> , 2010, 105, 184502.	7.8	28
25	FARADAY SIGNATURE OF MAGNETIC HELICITY FROM REDUCED DEPOLARIZATION. <i>Astrophysical Journal</i> , 2014, 786, 91.	4.5	28
26	Screw dynamo in a time-dependent pipe flow. <i>Physical Review E</i> , 2003, 67, 056309.	2.1	27
27	Wavelet-analysis of skin temperature oscillations during local heating for revealing endothelial dysfunction. <i>Microvascular Research</i> , 2015, 97, 109-114.	2.5	27
28	Large- and small-scale interactions and quenching in an α - Ω -dynamo. <i>Physical Review E</i> , 2006, 74, 066310.	2.1	26
29	Shaken and Stirred: When Bond Meets Suessâ€™de Vries and Gnevyshevâ€™Ohl. <i>Solar Physics</i> , 2021, 296, 1.	2.5	21
30	Extragalactic Magnetism with SOFIA (Legacy Program). I. The Magnetic Field in the Multiphase Interstellar Medium of M51 [*] . <i>Astrophysical Journal</i> , 2021, 921, 128.	4.5	21
31	Transient flows and reorientations of large-scale convection in a cubic cell. <i>International Communications in Heat and Mass Transfer</i> , 2019, 108, 104319.	5.6	20
32	Helicity detection of astrophysical magnetic fields from radio emission statistics. <i>JETP Letters</i> , 2010, 90, 637-641.	1.4	19
33	Measurements of turbulent magnetic diffusivity in a liquid-gallium flow. <i>JETP Letters</i> , 2008, 88, 167-171.	1.4	17
34	Dissipation scales of kinetic helicities in turbulence. <i>Physics of Fluids</i> , 2011, 23, .	4.0	17
35	Dynamics of a turbulent spin-down flow inside a torus. <i>Physics of Fluids</i> , 2009, 21, 045108.	4.0	16
36	Measuring the filamentary structure of interstellar clouds through wavelets. <i>Astronomy and Astrophysics</i> , 2019, 621, A5.	5.1	16

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37	Phase coherence and phase jumps in the Schwabe cycle. <i>Astronomische Nachrichten</i> , 2020, 341, 600-615.	1.2	16
38	The cross-helicity effect on cascade processes in MHD turbulence. <i>Doklady Physics</i> , 2009, 54, 93-97.	0.7	15
39	Spectral characteristic of mid-term quasi-periodicities in sunspot data. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 491, 5572-5578.	4.4	15
40	Magnetic field rotation in the screw gallium flow. <i>European Physical Journal B</i> , 2004, 41, 561-568.	1.5	14
41	Phenomenology of Turbulent Dynamo Growth and Saturation. <i>Astrophysical Journal</i> , 2008, 680, 809-815.	4.5	14
42	Systematic bias in the calculation of spectral density from a three-dimensional spatial grid. <i>Physical Review E</i> , 2014, 90, 053309.	2.1	14
43	The formation of regular interarm magnetic fields in spiral galaxies. <i>Astronomy and Astrophysics</i> , 2015, 578, A94.	5.1	14
44	Wavelet tomography of the Galactic magnetic field. <i>Astronomy and Astrophysics</i> , 2002, 391, 361-368.	5.1	14
45	Spectral properties of helical turbulence. <i>Fluid Dynamics</i> , 2009, 44, 658-666.	0.9	13
46	Turbulent viscosity and turbulent magnetic diffusivity in a decaying spin-down flow of liquid sodium. <i>Physical Review E</i> , 2012, 85, 016303.	2.1	13
47	Inverse cascade of energy in helical turbulence. <i>Journal of Fluid Mechanics</i> , 2020, 895, .	3.4	13
48	Cascades and dissipation ratio in rotating magnetohydrodynamic turbulence at low magnetic Prandtl number. <i>Physical Review E</i> , 2010, 82, 046311.	2.1	12
49	Current helicity and magnetic field anisotropy in solar active regions. <i>Monthly Notices of the Royal Astronomical Society</i> , 2015, 454, 1921-1930.	4.4	12
50	Electromagnetic measurements of the level of a liquid metal in closed volumes. <i>Measurement Techniques</i> , 2007, 50, 861-866.	0.6	11
51	JOINT INVERSE CASCADE OF MAGNETIC ENERGY AND MAGNETIC HELICITY IN MHD TURBULENCE. <i>Astrophysical Journal Letters</i> , 2015, 798, L35.	8.3	11
52	Long-term free decay of MHD turbulence. <i>Europhysics Letters</i> , 2010, 92, 34007.	2.0	10
53	Drawbacks of GPT and IPI measurements in dense sprays. <i>Experimental Thermal and Fluid Science</i> , 2019, 103, 29-36.	2.7	10
54	Wavelet analysis of the long-term activity of V833 Tau. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 495, 3788-3794.	4.4	10

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55	Beat-to-beat cardiovascular hemodynamic parameters based on wavelet spectrogram of impedance data. Biomedical Signal Processing and Control, 2017, 36, 50-56.	5.7	9
56	Modeling the total and polarized emission in evolving galaxies: "Spotty" magnetic structures. Astronomische Nachrichten, 2011, 332, 524-536.	1.2	8
57	Generation of zonal flows in convective systems by travelling thermal waves. Journal of Fluid Mechanics, 2021, 913, .	3.4	8
58	Measuring magnetism in the Milky Way with the Square Kilometre Array. , 2015, , .		8
59	Generating a tide-like flow in a cylindrical vessel by electromagnetic forcing. Physics of Fluids, 2020, 32, .	4.0	7
60	A multi-scale disk dynamo model. Astronomische Nachrichten, 2006, 327, 481-482.	1.2	6
61	Deciphering solar turbulence from sunspots records. Monthly Notices of the Royal Astronomical Society: Letters, 2009, 400, L47-L51.	3.3	6
62	Surface hardening of optic materials by deposition of diamond like carbon coatings from separated plasma of arc discharge. IOP Conference Series: Materials Science and Engineering, 2015, 74, 012013.	0.6	6
63	Assessment of cardiac time intervals by wavelet transform of the impedance cardiogram. Technology and Health Care, 2016, 24, S803-S809.	1.2	6
64	Enstrophy transfers in helical turbulence. Physical Review Fluids, 2019, 4, .	2.5	6
65	On uniqueness of transfer rates in magnetohydrodynamic turbulence. Journal of Plasma Physics, 2019, 85, .	2.1	5
66	A Nonstationary Dynamo Experiment in a Braked Torus. , 2001, , 1-8.		5
67	On the effects of turbulence on a screw dynamo. Geophysical and Astrophysical Fluid Dynamics, 2006, 100, 379-395.	1.2	4
68	Direct measurement of effective electro conductivity of turbulent liquid metal. Astronomische Nachrichten, 2008, 329, 706-708.	1.2	4
69	Full perturbation solution for the flow in a rotating torus. Physical Review E, 2008, 77, 057301.	2.1	4
70	The screw dynamo in a thick torus. Astronomische Nachrichten, 2011, 332, 11-16.	1.2	4
71	Helicity sources in a rotating convection. Journal of Physics: Conference Series, 2017, 899, 022017.	0.4	4
72	Direct Numerical Simulation of Helical Magnetohydrodynamic Turbulence with TARANG Code. , 2017, , .		4

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73	Combining Faraday Tomography and Wavelet Analysis. <i>Galaxies</i> , 2018, 6, 121.	3.0	4
74	Electromagnetic forcing of a flow with the azimuthal wave number $m = 2$ in cylindrical geometry. <i>Magnetohydrodynamics</i> , 2019, 55, 207-214.	0.3	4
75	Shell models for Hall effect induced magnetic turbulence. <i>New Journal of Physics</i> , 2007, 9, 293-293.	2.9	3
76	Dynamo action in MÃ¶bius flow. <i>Physical Review E</i> , 2008, 78, 025301.	2.1	3
77	Numerical simulation of helical flow in a cylindrical channel. <i>IOP Conference Series: Materials Science and Engineering</i> , 2017, 208, 012011.	0.6	3
78	Helical bottleneck effect in 3D homogeneous isotropic turbulence. <i>Fluid Dynamics Research</i> , 2018, 50, 011412.	1.3	3
79	Magnetic arms of NGC 6946 traced in Faraday cubes at low radio frequencies. <i>Astronomische Nachrichten</i> , 2018, 339, 440-446.	1.2	3
80	Shell model of magnetic field evolution under the Hall effect. <i>Magnetohydrodynamics</i> , 2003, 39, 327-334.	0.3	3
81	Wavelet analysis of the impedance cardiogram waveforms. <i>Journal of Physics: Conference Series</i> , 2012, 407, 012003.	0.4	2
82	Heat transfer in an infinite layer with fractal distribution of heating elements. <i>IOP Conference Series: Materials Science and Engineering</i> , 2017, 208, 012039.	0.6	2
83	On Cascade Energy Transfer in Convective Turbulence. <i>Journal of Applied Mechanics and Technical Physics</i> , 2017, 58, 1171-1180.	0.5	2
84	Analysis of mean and fluctuating helicity measured by TomoPIV in swirling jet. <i>EPJ Web of Conferences</i> , 2018, 180, 02097.	0.3	2
85	Cross helicity sign reversals in the dissipative scales of magnetohydrodynamic turbulence. <i>Magnetohydrodynamics</i> , 2019, 55, 225-232.	0.3	2
86	Magnetic Field Induction in a Toroidal Screw Flow of Liquid Gallium. <i>AIP Conference Proceedings</i> , 2004, , .	0.4	1
87	Wavelet analysis of bioimpedancometric data. <i>Journal of Physics: Conference Series</i> , 2010, 224, 012108.	0.4	1
88	Wavelet-based correlations of impedance cardiography signals and heart rate variability. <i>Journal of Physics: Conference Series</i> , 2010, 224, 012107.	0.4	1
89	Helicity scalings. <i>Journal of Physics: Conference Series</i> , 2011, 318, 042013.	0.4	1
90	Wavelet Analysis in Impedance Rheocardiography. , 2018, , 257-269.		1

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91	Magnetic Field in a Screw Flow with Fluctuations. Journal of Experimental and Theoretical Physics, 2018, 126, 566-572.	0.9	1
92	Analysis of mean and fluctuating helicity measured by TomoPIV in swirling jet. EPJ Web of Conferences, 2018, 180, 02097.	0.3	1
93	Droplet Sizing in the Spray of a Fuel Injector Using Wavelet Analysis. IOP Conference Series: Materials Science and Engineering, 2019, 581, 012042.	0.6	1
94	Assessment of Systolic Heart Function by Wavelet Analysis of the Impedance Cardiogram. IFMBE Proceedings, 2016, , 32-35.	0.3	1
95	Magnetic field in decaying grid turbulence of liquid sodium. Magnetohydrodynamics, 2019, 55, 149-160.	0.3	1
96	Relative distributions of cosmic ray electrons and magnetic fields in the ISM. Proceedings of the International Astronomical Union, 2008, 4, 93-94.	0.0	0
97	A way to detect the magnetic helicity using the observable polarized radio emission. Proceedings of the International Astronomical Union, 2010, 6, 185-191.	0.0	0
98	Long-time magnetic and cross helicities evolution in the free decaying MHD turbulence. Journal of Physics: Conference Series, 2011, 318, 072038.	0.4	0
99	Kinematic dynamo in a tetrahedron composed of helical Fourier modes. IOP Conference Series: Materials Science and Engineering, 2017, 208, 012038.	0.6	0
100	Sample size determination in the laser-Doppler measurements of skin blood flow. Microvascular Research, 2019, 125, 103883.	2.5	0
101	Determination of spray droplet size by wavelet analysis of interferometric images. Izmeritel'naya Tekhnika, 2021, , 23-27.	0.2	0
102	Direct measurement of turbulent magnetic diffusivity in liquid metal flow. Springer Proceedings in Physics, 2009, , 809-812.	0.2	0
103	Influence of helicities on statistical properties of MHD turbulence. Springer Proceedings in Physics, 2009, , 825-828.	0.2	0
104	Exploring the magnetic fields in local and distant galaxies. , 2011, , .		0
105	Inverse cascades in helically magnetized turbulence. Magnetohydrodynamics, 2017, 53, 89-96.	0.3	0
106	Energy transfers in MHD turbulence and its applications to dynamo. Magnetohydrodynamics, 2019, 55, 215-224.	0.3	0
107	A non local shell model for MHD turbulence. , 2007, , 751-751.		0