

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	Generation of zonal flows in convective systems by travelling thermal waves. <i>Journal of Fluid Mechanics</i> , 2021, 913, .	3.4	8
2	Shaken and Stirred: When Bond Meets Suessâ€“de Vries and Gnevyshevâ€“Ohl. <i>Solar Physics</i> , 2021, 296, 1.	2.5	21
3	Determination of spray droplet size by wavelet analysis of interferometric images. <i>Izmeritel'naya Tekhnika</i> , 2021, , 23-27.	0.2	0
4	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
5	Phase coherence and phase jumps in the Schwabe cycle. <i>Astronomische Nachrichten</i> , 2020, 341, 600-615.	1.2	16
6	Generating a tide-like flow in a cylindrical vessel by electromagnetic forcing. <i>Physics of Fluids</i> , 2020, 32, .	4.0	7
7	Inverse cascade of energy in helical turbulence. <i>Journal of Fluid Mechanics</i> , 2020, 895, .	3.4	13
8	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
9	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
10	On uniqueness of transfer rates in magnetohydrodynamic turbulence. <i>Journal of Plasma Physics</i> , 2019, 85, .	2.1	5
11	Drawbacks of GPT and IPI measurements in dense sprays. <i>Experimental Thermal and Fluid Science</i> , 2019, 103, 29-36.	2.7	10
12	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
13	Measuring the filamentary structure of interstellar clouds through wavelets. <i>Astronomy and Astrophysics</i> , 2019, 621, A5.	5.1	16
14	Sample size determination in the laser-Doppler measurements of skin blood flow. <i>Microvascular Research</i> , 2019, 125, 103883.	2.5	0
15	Droplet Sizing in the Spray of a Fuel Injector Using Wavelet Analysis. <i>IOP Conference Series: Materials Science and Engineering</i> , 2019, 581, 012042.	0.6	1
16	Enstrophy transfers in helical turbulence. <i>Physical Review Fluids</i> , 2019, 4, .	2.5	6
17	Magnetic field in decaying grid turbulence of liquid sodium. <i>Magnetohydrodynamics</i> , 2019, 55, 149-160.	0.3	1
18	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

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19	Cross helicity sign reversals in the dissipative scales of magnetohydrodynamic turbulence. <i>Magnetohydrodynamics</i> , 2019, 55, 225-232.	0.3	2
20	Energy transfers in MHD turbulence and its applications to dynamo. <i>Magnetohydrodynamics</i> , 2019, 55, 215-224.	0.3	0
21	Wavelet Analysis in Impedance Rheocardiography. , 2018, , 257-269.		1
22	Helical bottleneck effect in 3D homogeneous isotropic turbulence. <i>Fluid Dynamics Research</i> , 2018, 50, 011412.	1.3	3
23	Energy Spectra and Fluxes in Dissipation Range of Turbulent and Laminar Flows. <i>Fluid Dynamics</i> , 2018, 53, 862-873.	0.9	53
24	Analysis of mean and fluctuating helicity measured by TomoPIV in swirling jet. <i>EPJ Web of Conferences</i> , 2018, 180, 02097.	0.3	2
25	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
26	Combining Faraday Tomography and Wavelet Analysis. <i>Galaxies</i> , 2018, 6, 121.	3.0	4
27	Magnetic arms of NGC 6946 traced in Faraday cubes at low radio frequencies. <i>Astronomische Nachrichten</i> , 2018, 339, 440-446.	1.2	3
28	Kinematic dynamo in a tetrahedron of Fourier modes. <i>Fluid Dynamics Research</i> , 2018, 50, 051409.	1.3	39
29	Magnetic Field in a Screw Flow with Fluctuations. <i>Journal of Experimental and Theoretical Physics</i> , 2018, 126, 566-572.	0.9	1
30	Analysis of mean and fluctuating helicity measured by TomoPIV in swirling jet. <i>EPJ Web of Conferences</i> , 2018, 180, 02097.	0.3	1
31	Beat-to-beat cardiovascular hemodynamic parameters based on wavelet spectrogram of impedance data. <i>Biomedical Signal Processing and Control</i> , 2017, 36, 50-56.	5.7	9
32	Numerical simulation of helical flow in a cylindrical channel. <i>IOP Conference Series: Materials Science and Engineering</i> , 2017, 208, 012011.	0.6	3
33	Helicity sources in a rotating convection. <i>Journal of Physics: Conference Series</i> , 2017, 899, 022017.	0.4	4
34	Direct Numerical Simulation of Helical Magnetohydrodynamic Turbulence with TARANG Code. , 2017, , .		4
35	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
36	On Cascade Energy Transfer in Convective Turbulence. <i>Journal of Applied Mechanics and Technical Physics</i> , 2017, 58, 1171-1180.	0.5	2

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37	Kinematic dynamo in a tetrahedron composed of helical Fourier modes. IOP Conference Series: Materials Science and Engineering, 2017, 208, 012038.	0.6	0
38	Inverse cascades in helically magnetized turbulence. Magnetohydrodynamics, 2017, 53, 89-96.	0.3	0
39	Magnetic and gaseous spiral arms in M83. Astronomy and Astrophysics, 2016, 585, A21.	5.1	31
40	Assessment of cardiac time intervals by wavelet transform of the impedance cardiogram. Technology and Health Care, 2016, 24, S803-S809.	1.2	6
41	Assessment of Systolic Heart Function by Wavelet Analysis of the Impedance Cardiogram. IFMBE Proceedings, 2016, , 32-35.	0.3	1
42	Non-Kolmogorov cascade of helicity-driven turbulence. Physical Review E, 2015, 92, 031004.	2.1	67
43	Hindered Energy Cascade in Highly Helical Isotropic Turbulence. Physical Review Letters, 2015, 115, 234501.	7.8	64
44	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
45	JOINT INVERSE CASCADE OF MAGNETIC ENERGY AND MAGNETIC HELICITY IN MHD TURBULENCE. Astrophysical Journal Letters, 2015, 798, L35.	8.3	11
46	COMPARISON OF ALGORITHMS FOR DETERMINATION OF ROTATION MEASURE AND FARADAY STRUCTURE. I. 1100-1400 MHZ. Astronomical Journal, 2015, 149, 60.	4.7	48
47	The formation of regular interarm magnetic fields in spiral galaxies. Astronomy and Astrophysics, 2015, 578, A94.	5.1	14
48	Current helicity and magnetic field anisotropy in solar active regions. Monthly Notices of the Royal Astronomical Society, 2015, 454, 1921-1930.	4.4	12
49	Wavelet-analysis of skin temperature oscillations during local heating for revealing endothelial dysfunction. Microvascular Research, 2015, 97, 109-114.	2.5	27
50	Measuring magnetism in the Milky Way with the Square Kilometre Array. , 2015, , .		8
51	Systematic bias in the calculation of spectral density from a three-dimensional spatial grid. Physical Review E, 2014, 90, 053309.	2.1	14
52	FARADAY SIGNATURE OF MAGNETIC HELICITY FROM REDUCED DEPOLARIZATION. Astrophysical Journal, 2014, 786, 91.	4.5	28
53	An observational test for correlations between cosmic rays and magnetic fields. Monthly Notices of the Royal Astronomical Society, 2014, 437, 2201-2216.	4.4	29
54	Dynamos: from an astrophysical model to laboratory experiments. Physics-Uspexhi, 2014, 57, 292-311.	2.2	36

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55	Shell models of magnetohydrodynamic turbulence. <i>Physics Reports</i> , 2013, 523, 1-60.	25.6	111
56	The relation between magnetic and material arms in models for spiral galaxies. <i>Astronomy and Astrophysics</i> , 2013, 556, A147.	5.1	32
57	Multiscale magnetic fields in spiral galaxies: evolution and reversals. <i>Astronomy and Astrophysics</i> , 2012, 537, A68.	5.1	33
58	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
59	Wavelet analysis of the impedance cardiogram waveforms. <i>Journal of Physics: Conference Series</i> , 2012, 407, 012003.	0.4	2
60	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
61	Helicity scalings. <i>Journal of Physics: Conference Series</i> , 2011, 318, 042013.	0.4	1
62	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
63	The screw dynamo in a thick torus. <i>Astronomische Nachrichten</i> , 2011, 332, 11-16.	1.2	4
64	Modeling the total and polarized emission in evolving galaxies: "Spotty" magnetic structures. <i>Astronomische Nachrichten</i> , 2011, 332, 524-536.	1.2	8
65	Long-time magnetic and cross helicities evolution in the free decaying MHD turbulence. <i>Journal of Physics: Conference Series</i> , 2011, 318, 072038.	0.4	0
66	Dissipation scales of kinetic helicities in turbulence. <i>Physics of Fluids</i> , 2011, 23, .	4.0	17
67	Exploring the magnetic fields in local and distant galaxies. , 2011, , .		0
68	Wavelet analysis of bioimpedancometric data. <i>Journal of Physics: Conference Series</i> , 2010, 224, 012108.	0.4	1
69	Wavelet-based Faraday rotation measure synthesis. <i>Monthly Notices of the Royal Astronomical Society: Letters</i> , 2010, 401, L24-L28.	3.3	37
70	Helicity detection of astrophysical magnetic fields from radio emission statistics. <i>JETP Letters</i> , 2010, 90, 637-641.	1.4	19
71	Direct Measurement of Effective Magnetic Diffusivity in Turbulent Flow of Liquid Sodium. <i>Physical Review Letters</i> , 2010, 105, 184502.	7.8	28
72	Long-term free decay of MHD turbulence. <i>Europhysics Letters</i> , 2010, 92, 34007.	2.0	10

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73	Cascades and dissipation ratio in rotating magnetohydrodynamic turbulence at low magnetic Prandtl number. <i>Physical Review E</i> , 2010, 82, 046311.	2.1	12
74	Wavelet-based correlations of impedance cardiography signals and heart rate variability. <i>Journal of Physics: Conference Series</i> , 2010, 224, 012107.	0.4	1
75	A way to detect the magnetic helicity using the observable polarized radio emission. <i>Proceedings of the International Astronomical Union</i> , 2010, 6, 185-191.	0.0	0
76	Spectral properties of helical turbulence. <i>Fluid Dynamics</i> , 2009, 44, 658-666.	0.9	13
77	Deciphering solar turbulence from sunspots records. <i>Monthly Notices of the Royal Astronomical Society: Letters</i> , 2009, 400, L47-L51.	3.3	6
78	The cross-helicity effect on cascade processes in MHD turbulence. <i>Doklady Physics</i> , 2009, 54, 93-97.	0.7	15
79	Dynamics of a turbulent spin-down flow inside a torus. <i>Physics of Fluids</i> , 2009, 21, 045108.	4.0	16
80	Direct measurement of turbulent magnetic diffusivity in liquid metal flow. <i>Springer Proceedings in Physics</i> , 2009, , 809-812.	0.2	0
81	Influence of helicities on statistical properties of MHD turbulence. <i>Springer Proceedings in Physics</i> , 2009, , 825-828.	0.2	0
82	Direct measurement of effective electro conductivity of turbulent liquid metal. <i>Astronomische Nachrichten</i> , 2008, 329, 706-708.	1.2	4
83	Measurements of turbulent magnetic diffusivity in a liquid-gallium flow. <i>JETP Letters</i> , 2008, 88, 167-171.	1.4	17
84	Full perturbation solution for the flow in a rotating torus. <i>Physical Review E</i> , 2008, 77, 057301.	2.1	4
85	Dynamo action in MÃ¶bius flow. <i>Physical Review E</i> , 2008, 78, 025301.	2.1	3
86	Relative distributions of cosmic ray electrons and magnetic fields in the ISM. <i>Proceedings of the International Astronomical Union</i> , 2008, 4, 93-94.	0.0	0
87	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
88	Phenomenology of Turbulent Dynamo Growth and Saturation. <i>Astrophysical Journal</i> , 2008, 680, 809-815.	4.5	14
89	Shell models for Hall effect induced magnetic turbulence. <i>New Journal of Physics</i> , 2007, 9, 293-293.	2.9	3
90	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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91	Electromagnetic measurements of the level of a liquid metal in closed volumes. Measurement Techniques, 2007, 50, 861-866.	0.6	11
92	A non local shell model for MHD turbulence. , 2007, , 751-751.		0
93	Fully developed turbulent dynamo at low magnetic Prandtl numbers. Journal of Turbulence, 2006, 7, N39.	1.4	37
94	Analysis of spiral arms using anisotropic wavelets: gas, dust and magnetic fields in Mâ€™51. Astronomy and Astrophysics, 2006, 458, 441-452.	5.1	62
95	A multi-scale disk dynamo model. Astronomische Nachrichten, 2006, 327, 481-482.	1.2	6
96	On the effects of turbulence on a screw dynamo. Geophysical and Astrophysical Fluid Dynamics, 2006, 100, 379-395.	1.2	4
97	Mean electromotive force due to turbulence of a conducting fluid in the presence of mean flow. Physical Review E, 2006, 73, 056311.	2.1	64
98	Large- and small-scale interactions and quenching in an Ω -dynamo. Physical Review E, 2006, 74, 066310.	2.1	26
99	Induction, helicity, and alpha effect in a toroidal screw flow of liquid gallium. Physical Review E, 2006, 73, 046310.	2.1	43
100	Magnetic Field Induction in a Toroidal Screw Flow of Liquid Gallium. AIP Conference Proceedings, 2004, , .	0.4	1
101	Magnetic field rotation in the screw gallium flow. European Physical Journal B, 2004, 41, 561-568.	1.5	14
102	Screw dynamo in a time-dependent pipe flow. Physical Review E, 2003, 67, 056309.	2.1	27
103	Shell model of magnetic field evolution under the Hall effect. Magnetohydrodynamics, 2003, 39, 327-334.	0.3	3
104	Wavelet tomography of the Galactic magnetic field. Astronomy and Astrophysics, 2002, 391, 361-368.	5.1	14
105	Non-stationary screw flow in a toroidal channel: way to a laboratory dynamo experiment. Magnetohydrodynamics, 2002, 38, 143-162.	0.3	32
106	Structures in the rotation measure sky. Monthly Notices of the Royal Astronomical Society, 2001, 325, 649-664.	4.4	84
107	A Nonstationary Dynamo Experiment in a Braked Torus. , 2001, , 1-8.		5