Alexander A Schekochihin

List of Publications by Year
in descending order

153	10,624	24978	33814
papers	citations	57 h-index	99 g-index

156	156	156	4124
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	ASTROPHYSICAL GYROKINETICS: KINETIC AND FLUID TURBULENT CASCADES IN MAGNETIZED WEAKLY COLLISIONAL PLASMAS. Astrophysical Journal, Supplement Series, 2009, 182, 310-377.	3.0	697
2	Instability of current sheets and formation of plasmoid chains. Physics of Plasmas, 2007, 14, .	0.7	560
3	Simulations of the Smallâ€Scale Turbulent Dynamo. Astrophysical Journal, 2004, 612, 276-307.	1.6	412
4	Fast Magnetic Reconnection in the Plasmoid-Dominated Regime. Physical Review Letters, 2010, 105, 235002.	2.9	292
5	A model of turbulence in magnetized plasmas: Implications for the dissipation range in the solar wind. Journal of Geophysical Research, 2008, 113, .	3.3	281
6	Astrophysical Gyrokinetics: Basic Equations and Linear Theory. Astrophysical Journal, 2006, 651, 590-614.	1.6	265
7	Kinetic Simulations of Magnetized Turbulence in Astrophysical Plasmas. Physical Review Letters, 2008, 100, 065004.	2.9	254
8	Turbulent heating in galaxy clusters brightest in X-rays. Nature, 2014, 515, 85-87.	13.7	253
9	Gyrokinetic Simulations of Solar Wind Turbulence from Ion to Electron Scales. Physical Review Letters, 2011, 107, 035004.	2.9	205
10	Formation of Plasmoid Chains in Magnetic Reconnection. Physical Review Letters, 2009, 103, 105004.	2.9	196
11	Plasma Instabilities and Magnetic Field Growth in Clusters of Galaxies. Astrophysical Journal, 2005, 629, 139-142.	1.6	167
12	Magnetic reconnection and stochastic plasmoid chains in high-Lundquist-number plasmas. Physics of Plasmas, 2012, 19, .	0.7	165
13	Firehose and Mirror Instabilities in a Collisionless Shearing Plasma. Physical Review Letters, 2014, 112, .	2.9	161
14	Fluctuation dynamo and turbulent induction at low magnetic Prandtl numbers. New Journal of Physics, 2007, 9, 300-300.	1.2	159
15	Anisotropy of Solar Wind Turbulence between Ion and Electron Scales. Physical Review Letters, 2010, 104, 255002.	2.9	159
16	Power and spectral index anisotropy of the entire inertial range of turbulence in the fast solar wind. Monthly Notices of the Royal Astronomical Society: Letters, 2010, 407, L31-L35.	1.2	151
17	X-ray surface brightness and gas density fluctuations in the Coma cluster. Monthly Notices of the Royal Astronomical Society, 2012, 421, 1123-1135.	1.6	151
18	Turbulence, magnetic fields, and plasma physics in clusters of galaxies. Physics of Plasmas, 2006, 13, 056501.	0.7	136

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19	Linearized model Fokkerâ€“Planck collision operators for gyrokinetic simulations. I. Theory. Physics of Plasmas, 2008, 15, .	0.7	124
20	Anisotropy of AlfvÃ©nic turbulence in the solar wind and numerical simulations. Monthly Notices of the Royal Astronomical Society, 2011, 415, 3219-3226.	1.6	120
21	Numerical Demonstration of Fluctuation Dynamo at Low Magnetic Prandtl Numbers. Physical Review Letters, 2007, 98, 208501.	2.9	119
22	A model of nonlinear evolution and saturation of the turbulent MHD dynamo. New Journal of Physics, 2002, 4, 84-84.	1.2	117
23	X-Point Collapse and Saturation in the Nonlinear Tearing Mode Reconnection. Physical Review Letters, 2005, 95, 235003.	2.9	112
24	Nonlinear Phase Mixing and Phase-Space Cascade of Entropy in Gyrokinetic Plasma Turbulence. Physical Review Letters, 2009, 103, 015003.	2.9	107
25	The Onset of a Small-Scale Turbulent Dynamo at Low Magnetic Prandtl Numbers. Astrophysical Journal, 2005, 625, L115-L118.	1.6	106
26	Gyrokinetic turbulence: a nonlinear route to dissipation through phase space. Plasma Physics and Controlled Fusion, 2008, 50, 124024.	0.9	106
27	THREE-DIMENSIONAL STRUCTURE OF SOLAR WIND TURBULENCE. Astrophysical Journal, 2012, 758, 120.	1.6	105
28	Laboratory evidence of dynamo amplification of magnetic fields in a turbulent plasma. Nature Communications, 2018, 9, 591.	5.8	105
29	Generation of Magnetic Field by Combined Action of Turbulence and Shear. Physical Review Letters, 2008, 100, 184501.	2.9	103
30	A thermally stable heating mechanism for the intracluster medium: turbulence, magnetic fields and plasma instabilities. Monthly Notices of the Royal Astronomical Society, 2011, 410, 2446-2457.	1.6	102
31	Turbulent magnetic reconnection in two dimensions. Monthly Notices of the Royal Astronomical Society: Letters, 2009, 399, L146-L150.	1.2	99
32	Reduced fluid-kinetic equations for low-frequency dynamics, magnetic reconnection, and electron heating in low-beta plasmas. Physics of Plasmas, 2011, 18, .	0.7	99
33	Spectra and Growth Rates of Fluctuating Magnetic Fields in the Kinematic Dynamo Theory with Large Magnetic Prandtl Numbers. Astrophysical Journal, 2002, 567, 828-852.	1.6	91
34	Phase mixing versus nonlinear advection in drift-kinetic plasma turbulence. Journal of Plasma Physics, 2016, 82, .	0.7	91
35	Thermal disequilibration of ions and electrons by collisionless plasma turbulence. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 771-776.	3.3	90
36	Critical balance in magnetohydrodynamic, rotating and stratified turbulence: towards a universal scaling conjecture. Journal of Fluid Mechanics, 2011, 677, 134-153.	1.4	87

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37	MULTI-SPECIES MEASUREMENTS OF THE FIREHOSE AND MIRROR INSTABILITY THRESHOLDS IN THE SOLAR WIND. Astrophysical Journal Letters, 2016, 825, L26.	3.0	86
38	Gyrokinetic simulations of spherical tokamaks. Plasma Physics and Controlled Fusion, 2009, 51, 124020.	0.9	84
39	Critically Balanced Ion Temperature Gradient Turbulence in Fusion Plasmas. Physical Review Letters, 2011, 107, 115003.	2.9	84
40	Turbulent amplification of magnetic fields in laboratory laser-produced shock waves. Nature Physics, 2014, 10, 520-524.	6.5	84
41	Disruption of sheet-like structures in AlfvÃ©nic turbulence by magnetic reconnection. Monthly Notices of the Royal Astronomical Society, 2017, 468, 4862-4871.	1.6	83
42	Anisotropy of Imbalanced AlfvÃ©nic Turbulence in Fast Solar Wind. Physical Review Letters, 2011, 106, 045001.	2.9	82
43	Linearized model Fokkerâ€“Planck collision operators for gyrokinetic simulations. II. Numerical implementation and tests. Physics of Plasmas, 2009, 16, .	0.7	81
44	INTERMITTENCY AND ALIGNMENT IN STRONG RMHD TURBULENCE. Astrophysical Journal, 2015, 807, 39.	1.6	80
45	The Smallâ€Scale Structure of Magnetohydrodynamic Turbulence with Large Magnetic Prandtl Numbers. Astrophysical Journal, 2002, 576, 806-813.	1.6	79
46	Multiscale gyrokinetics for rotating tokamak plasmas: fluctuations, transport and energy flows. Reports on Progress in Physics, 2013, 76, 116201.	8.1	78
47	Critical Magnetic Prandtl Number for Small-Scale Dynamo. Physical Review Letters, 2004, 92, 054502.	2.9	76
48	Nonlinear Growth of Firehose and Mirror Fluctuations in Astrophysical Plasmas. Physical Review Letters, 2008, 100, 081301.	2.9	75
49	Plasmoid and Kelvin-Helmholtz instabilities in Sweet-Parker current sheets. Physical Review E, 2013, 87, 013102.	0.8	75
50	Gas density fluctuations in the Perseus Cluster: clumping factor and velocity power spectrum. Monthly Notices of the Royal Astronomical Society, 2015, 450, 4184-4197.	1.6	71
51	Structure of small-scale magnetic fields in the kinematic dynamo theory. Physical Review E, 2001, 65, 016305.	0.8	69
52	Turbulent Transport in Tokamak Plasmas with Rotational Shear. Physical Review Letters, 2011, 106, 175004.	2.9	69
53	Fast Collisionless Reconnection and Electron Heating in Strongly Magnetized Plasmas. Physical Review Letters, 2013, 111, 025002.	2.9	69
54	Large-Scale Magnetic Field Generation by Randomly Forced Shearing Waves. Physical Review Letters, 2011, 107, 255004.	2.9	66

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55	Disruption of AlfvÃ©nic turbulence by magnetic reconnection in a collisionless plasma. Journal of Plasma Physics, 2017, 83, .	0.7	66
56	THE RELATION BETWEEN GAS DENSITY AND VELOCITY POWER SPECTRA IN GALAXY CLUSTERS: QUALITATIVE TREATMENT AND COSMOLOGICAL SIMULATIONS. Astrophysical Journal Letters, 2014, 788, L13.	3.0	65
57	Turbulence and Magnetic Fields in Astrophysical Plasmas. Fluid Mechanics and Its Applications, 2007, , 85-115.	0.1	62
58	Inertial-range kinetic turbulence in pressure-anisotropic astrophysical plasmas. Journal of Plasma Physics, 2015, 81, .	0.7	58
59	INTERPRETING POWER ANISOTROPY MEASUREMENTS IN PLASMA TURBULENCE. Astrophysical Journal Letters, 2010, 711, L79-L83.	3.0	55
60	Transport Bifurcation in a Rotating Tokamak Plasma. Physical Review Letters, 2010, 105, 215003.	2.9	55
61	A statistical model of three-dimensional anisotropy and intermittency in strong AlfvÃ©nic turbulence. Monthly Notices of the Royal Astronomical Society, 2017, 466, 3918-3927.	1.6	55
62	A non-linear theory of the parallel firehose and gyrothermal instabilities in a weakly collisional plasma. Monthly Notices of the Royal Astronomical Society, 2011, 413, 7-38.	1.6	54
63	Two-dimensional gyrokinetic turbulence. Journal of Fluid Mechanics, 2010, 664, 407-435.	1.4	52
64	Refined critical balance in strong AlfvÃ©nic turbulence. Monthly Notices of the Royal Astronomical Society: Letters, 2015, 449, L77-L81.	1.2	52
65	Developed turbulence and nonlinear amplification of magnetic fields in laboratory and astrophysical plasmas. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 8211-8215.	3.3	52
66	INEFFICIENT DRIVING OF BULK TURBULENCE BY ACTIVE GALACTIC NUCLEI IN A HYDRODYNAMIC MODEL OF THE INTRACLUSTER MEDIUM. Astrophysical Journal, 2015, 815, 41.	1.6	51
67	Microstability physics as illuminated in the spherical tokamak. Plasma Physics and Controlled Fusion, 2005, 47, B323-B336.	0.9	50
68	The nature and energetics of AGN-driven perturbations in the hot gas in the Perseus Cluster. Monthly Notices of the Royal Astronomical Society, 2016, 458, 2902-2915.	1.6	47
69	Proton imaging of stochastic magnetic fields. Journal of Plasma Physics, 2017, 83, .	0.7	47
70	Suppressed effective viscosity in the bulk intergalactic plasma. Nature Astronomy, 2019, 3, 832-837.	4.2	45
71	Self-inhibiting thermal conduction in a high-, whistler-unstable plasma. Journal of Plasma Physics, 2018, 84, .	0.7	44
72	Numerical experiments on dynamo action in sheared and rotating turbulence. Astronomische Nachrichten, 2008, 329, 737-749.	0.6	43

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73	Turbulent dynamo in a collisionless plasma. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 3950-3953.	3.3	43
74	Alignment and Scaling of Large-Scale Fluctuations in the Solar Wind. Physical Review Letters, 2013, 110, 025003.	2.9	41
75	High-frequency heating of the solar wind triggered by low-frequency turbulence. Nature Astronomy, 2022, 6, 715-723.	4.2	41
76	CORRELATIONS AT LARGE SCALES AND THE ONSET OF TURBULENCE IN THE FAST SOLAR WIND. Astrophysical Journal, 2013, 778, 177.	1.6	38
77	Astrophysical gyrokinetics: turbulence in pressure-anisotropic plasmas at ion scales andÂbeyond. Journal of Plasma Physics, 2018, 84, .	0.7	38
78	Fluidization of collisionless plasma turbulence. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1185-1194.	3.3	38
79	Pressure-anisotropy-driven microturbulence and magnetic-field evolution in shearing, collisionless plasma. Monthly Notices of the Royal Astronomical Society, 2016, 459, 2701-2720.	1.6	37
80	Exact scaling laws and the local structure of isotropic magnetohydrodynamic turbulence. Journal of Fluid Mechanics, 2007, 575, 111-120.	1.4	36
81	Thermal conduction in a mirror-unstable plasma. Monthly Notices of the Royal Astronomical Society, 2016, 460, 467-477.	1.6	36
82	Linear Structures in the Core of the Coma Cluster of Galaxies. Science, 2013, 341, 1365-1368.	6.0	35
83	Measures of three-dimensional anisotropy and intermittency in strong AlfvÃ©nic turbulence. Monthly Notices of the Royal Astronomical Society, 2016, 459, 2130-2139.	1.6	35
84	A STRINGENT LIMIT ON THE AMPLITUDE OF ALFVÃ‰NIC PERTURBATIONS IN HIGH-BETA LOW-COLLISIONALITY PLASMAS. Astrophysical Journal Letters, 2016, 830, L25.	3.0	35
85	Non-linear mirror instability. Monthly Notices of the Royal Astronomical Society: Letters, 2015, 447, L45-L49.	1.2	34
86	Fluctuation-dissipation relations for a plasma-kinetic Langevin equation. Journal of Plasma Physics, 2015, 81, .	0.7	33
87	Collisionality scaling of the electron heat flux in ETG turbulence. Plasma Physics and Controlled Fusion, 2017, 59, 055002.	0.9	33
88	Generation of internal waves by buoyant bubbles in galaxy clusters and heating of intracluster medium. Monthly Notices of the Royal Astronomical Society, 2018, 478, 4785-4798.	1.6	33
89	On the violation of the zeroth law of turbulence in space plasmas. Journal of Plasma Physics, 2021, 87, .	0.7	33
90	Transition to subcritical turbulence in a tokamak plasma. Journal of Plasma Physics, 2016, 82, .	0.7	32

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91	Probing magnetic turbulence by synchrotron polarimetry: statistics and structure of magnetic fields from Stokes correlators. Monthly Notices of the Royal Astronomical Society, 2009, 398, 1970-1988.	1.6	31
92	Comparison of BES measurements of ion-scale turbulence with direct gyro-kinetic simulations of MAST L-mode plasmas. Plasma Physics and Controlled Fusion, 2014, 56, 025012.	0.9	31
93	Numerical modeling of laser-driven experiments aiming to demonstrate magnetic field amplification via turbulent dynamo. Physics of Plasmas, 2017, 24, .	0.7	31
94	Kinetic Simulations of the Interruption of Large-Amplitude Shear-AlfvÃ©n Waves in a High- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î²</mml:mi></mml:math> Plasma. Physical Review Letters, 2017, 119, 155101.	2.9	31
95	Constraints on ion versus electron heating by plasma turbulence at low beta. Journal of Plasma Physics, 2019, 85, .	0.7	31
96	Models of magnetic field evolution and effective viscosity in weakly collisional extragalactic plasmas. Monthly Notices of the Royal Astronomical Society, 2014, 440, 3226-3242.	1.6	30
97	Overview of new MAST physics in anticipation of first results from MAST Upgrade. Nuclear Fusion, 2019, 59, 112011.	1.6	30
98	Interplanetary and interstellar plasma turbulence. Plasma Physics and Controlled Fusion, 2007, 49, A195-A209.	0.9	29
99	Magnetofluid dynamics of magnetized cosmic plasma: firehose and gyrothermal instabilities. Monthly Notices of the Royal Astronomical Society, 2010, , .	1.6	29
100	Scaling of Spontaneous Rotation with Temperature and Plasma Current in Tokamaks. Physical Review Letters, 2012, 108, 095001.	2.9	29
101	Experimental Signatures of Critically Balanced Turbulence in MAST. Physical Review Letters, 2013, 110, 145002.	2.9	29
102	Zero-Turbulence Manifold in a Toroidal Plasma. Physical Review Letters, 2012, 109, 265001.	2.9	28
103	Saturated State of the Nonlinear Small-Scale Dynamo. Physical Review Letters, 2004, 92, 084504.	2.9	27
104	Fluctuation dynamo in a weakly collisional plasma. Journal of Plasma Physics, 2020, 86, .	0.7	27
105	Subcritical fluctuations and suppression of turbulence in differentially rotating gyrokinetic plasmas. Plasma Physics and Controlled Fusion, 2012, 54, 055011.	0.9	26
106	Powering of cool filaments in cluster cores by buoyant bubbles â€“ I. Qualitative model. Monthly Notices of the Royal Astronomical Society, 2013, 436, 526-530.	1.6	26
107	Supergranulation and multiscale flows in the solar photosphere. Astronomy and Astrophysics, 2017, 599, A69.	2.1	26
108	A solvable model of Vlasov-kinetic plasma turbulence in Fourierâ€“Hermite phase space. Journal of Plasma Physics, 2018, 84, .	0.7	26

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109	Suppression of phase mixing in drift-kinetic plasma turbulence. Physics of Plasmas, 2016, 23, .	0.7	25
110	Zonally dominated dynamics and Dimits threshold in curvature-driven ITG turbulence. Journal of Plasma Physics, 2020, 86, .	0.7	25
111	Finite-correlation-time effects in the kinematic dynamo problem. Physics of Plasmas, 2001, 8, 4937-4953.	0.7	24
112	Momentum Injection in Tokamak Plasmas and Transitions to Reduced Transport. Physical Review Letters, 2011, 106, 115004.	2.9	24
113	Supersonic plasma turbulence in the laboratory. Nature Communications, 2019, 10, 1758.	5.8	24
114	Diffusion of passive scalar in a finite-scale random flow. Physical Review E, 2004, 70, 046304.	0.8	21
115	Overview of physics results from MAST towards ITER/DEMO and the MAST Upgrade. Nuclear Fusion, 2013, 53, 104008.	1.6	21
116	Ion-scale turbulence in MAST: anomalous transport, subcritical transitions, and comparison to BES measurements. Plasma Physics and Controlled Fusion, 2017, 59, 114003.	0.9	21
117	Suppression of local heat flux in a turbulent magnetized intracluster medium. Monthly Notices of the Royal Astronomical Society, 2014, 440, 1153-1164.	1.6	20
118	Magneto-immutable turbulence in weakly collisional plasmas. Journal of Plasma Physics, 2019, 85, .	0.7	20
119	Time-resolved turbulent dynamo in a laser plasma. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	20
120	MHD Turbulence: Nonlocal, Anisotropic, Nonuniversal?. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2008, , 347-354.	0.1	20
121	Weak AlfvÃ©n-wave turbulence revisited. Physical Review E, 2012, 85, 036406.	0.8	19
122	Amplitude limits and nonlinear damping of shear-AlfvÃ©n waves in high-beta low-collisionality plasmas. New Journal of Physics, 2017, 19, 055005.	1.2	19
123	Field reconstruction from proton radiography of intense laser driven magnetic reconnection. Physics of Plasmas, 2019, 26, .	0.7	18
124	Transport bifurcation induced by sheared toroidal flow in tokamak plasmas. Physics of Plasmas, 2011, 18, .	0.7	17
125	Overview of MAST results. Nuclear Fusion, 2015, 55, 104008.	1.6	16
126	Self-sustaining sound in collisionless, high-Î² plasma. Journal of Plasma Physics, 2020, 86, .	0.7	15

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127	Measurement and physical interpretation of the mean motion of turbulent density patterns detected by the beam emission spectroscopy system on the mega amp spherical tokamak. Plasma Physics and Controlled Fusion, 2012, 54, 095012.	0.9	14
128	HowesetÂal.Reply:. Physical Review Letters, 2008, 101, .	2.9	13
129	Reconnection-Controlled Decay of Magnetohydrodynamic Turbulence and the Role of Invariants. Physical Review X, 2021, 11, .	2.8	13
130	Geometric properties of passive random advection. Physical Review E, 2000, 62, 545-552.	0.8	12
131	Constraints on dynamo action in plasmas. Journal of Plasma Physics, 2016, 82, .	0.7	12
132	Ion versus Electron Heating in Compressively Driven Astrophysical Gyrokinetic Turbulence. Physical Review X, 2020, 10, .	2.8	12
133	Symmetry breaking in MAST plasma turbulence due to toroidal flow shear. Plasma Physics and Controlled Fusion, 2017, 59, 034002.	0.9	11
134	Strong suppression of heat conduction in a laboratory replica of galaxy-cluster turbulent plasmas. Science Advances, 2022, 8, eabj6799.	4.7	11
135	Self-Similar Turbulent Dynamo. Physical Review Letters, 2004, 92, 064501.	2.9	10
136	Fast growth of magnetic fields in galaxy clusters: a self-accelerating dynamo. Astronomische Nachrichten, 2006, 327, 599-604.	0.6	10
137	Experimental determination of the correlation properties of plasma turbulence using 2D BES systems. Plasma Physics and Controlled Fusion, 2017, 59, 044008.	0.9	9
138	Inefficient Magnetic-Field Amplification in Supersonic Laser-Plasma Turbulence. Physical Review Letters, 2021, 127, 175002.	2.9	9
139	Local dependence of ion temperature gradient on magnetic configuration, rotational shear and turbulent heat flux in MAST. Nuclear Fusion, 2014, 54, 042003.	1.6	8
140	Transport of High-energy Charged Particles through Spatially Intermittent Turbulent Magnetic Fields. Astrophysical Journal, 2020, 892, 114.	1.6	8
141	Future magnetic field studies using the Planck surveyor experiment. Astronomische Nachrichten, 2006, 327, 626-631.	0.6	6
142	EIDOSCOPE: particle acceleration at plasma boundaries. Experimental Astronomy, 2012, 33, 491-527.	1.6	6
143	Energy partition between AlfvÃ©nic and compressive fluctuations in magnetorotational turbulence with near-azimuthal mean magnetic field. Journal of Plasma Physics, 2022, 88, .	0.7	6
144	Nonmonotonic Pair Potentials in the Interaction of Like-Charged Objects in Solution. Langmuir, 2022, 38, 786-800.	1.6	5

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145	Elasticity of tangled magnetic fields. Journal of Plasma Physics, 2020, 86, .	0.7	4
146	Dissipation-scale turbulence in the solar wind. AIP Conference Proceedings, 2007, , .	0.3	3
147	Polarization of thermal bremsstrahlung emission due to electron pressure anisotropy. Monthly Notices of the Royal Astronomical Society, 2016, 461, 2162-2173.	1.6	3
148	Insensitivity of a turbulent laser-plasma dynamo to initial conditions. Matter and Radiation at Extremes, 2022, 7, .	1.5	3
149	From Small-Scale Dynamo to Isotropic MHD Turbulence. Astrophysics and Space Science, 2004, 292, 141-146.	0.5	2
150	Magnetic turbulence in clusters of galaxies. Proceedings of the International Astronomical Union, 2009, 5, 456-458.	0.0	2
151	Magneto-optic probe measurements in low density-supersonic jets. Journal of Instrumentation, 2017, 12, P12001-P12001.	0.5	2
152	Model Collision Operators for Numerical Gyrokinetics. , 2008, , .		1
153	Scaling laws, nonlocality and structure in isotropic magnetohydrodynamic turbulence. , 2007, , 76-78.		0