Nikolai Erkaev

List of Publications by Year
in descending order

122 papers	3,591 citations	147801 31 h-index	161849 54 g-index
123 all docs	123 docs citations	123 times ranked	2483 citing authors

#	Article	IF	Citations
1	Roche lobe effects on the atmospheric loss from â€œHot Jupitersâ€• Astronomy and Astrophysics, 2007, 472, 329-334.	5.1	300
2	Coronal Mass Ejection (CME) Activity of Low Mass M Stars as An Important Factor for The Habitability of Terrestrial Exoplanets. II. CME-Induced Ion Pick Up of Earth-like Exoplanets in Close-In Habitable Zones. Astrobiology, 2007, 7, 185-207.	3.0	256
3	Determining the mass loss limit for close-in exoplanets: what can we learn from transit observations?. Astronomy and Astrophysics, 2009, 506, 399-410.	5.1	135
4	Origin and loss of nebula-captured hydrogen envelopes from â€˜subâ€™- to â€˜super-Earthsâ€™ in the habitable zone of Sun-like stars. Monthly Notices of the Royal Astronomical Society, 2014, 439, 3225-3238.	4.4	126
5	THE EVOLUTION OF STELLAR ROTATION AND THE HYDROGEN ATMOSPHERES OF HABITABLE-ZONE TERRESTRIAL PLANETS. Astrophysical Journal Letters, 2015, 815, L12.	8.3	114
6	XUV-Exposed, Non-Hydrostatic Hydrogen-Rich Upper Atmospheres of Terrestrial Planets. Part I: Atmospheric Expansion and Thermal Escape. Astrobiology, 2013, 13, 1011-1029.	3.0	107
7	Probing the blow-off criteria of hydrogen-rich â€˜super-Earthsâ€™. Monthly Notices of the Royal Astronomical Society, 2013, 430, 1247-1256.	4.4	93
8	ATMOSPHERE EXPANSION AND MASS LOSS OF CLOSE-ORBIT GIANT EXOPLANETS HEATED BY STELLAR XUV. I. MODELING OF HYDRODYNAMIC ESCAPE OF UPPER ATMOSPHERIC MATERIAL. Astrophysical Journal, 2014, 795, 132.	4.5	90
9	Grid of upper atmosphere models for 1â€“40 M_{âŠ•} planets: application to CoRoT-7 b and HD 219134 b,c. Astronomy and Astrophysics, 2018, 619, A151.	5.1	89
10	Aeronomical constraints to the minimum mass and maximum radius of hot low-mass planets. Astronomy and Astrophysics, 2017, 598, A90.	5.1	84
11	Escape of the martian protoatmosphere and initial water inventory. Planetary and Space Science, 2014, 98, 106-119.	1.7	83
12	Overcoming the Limitations of the Energy-limited Approximation for Planet Atmospheric Escape. Astrophysical Journal Letters, 2018, 866, L18.	8.3	82
13	EUV-driven mass-loss of protoplanetary cores with hydrogen-dominated atmospheres: the influences of ionization and orbital distance. Monthly Notices of the Royal Astronomical Society, 2016, 460, 1300-1309.	4.4	78
14	Charts of joint Kelvin-Helmholtz and Rayleigh-Taylor instabilites at the dayside magnetopause for strongly northward interplanetary magnetic field. Journal of Geophysical Research, 1998, 103, 6703-6727.	3.3	72
15	Conditions at the magnetopause of Saturn and implications for the solar wind interaction. Journal of Geophysical Research: Space Physics, 2013, 118, 3087-3095.	2.4	67
16	Stellar wind interaction and pick-up ion escape of the Kepler-11 â€œsuper-Earthsâ€• Astronomy and Astrophysics, 2014, 562, A116.	5.1	63
17	An overabundance of low-density Neptune-like planets. Monthly Notices of the Royal Astronomical Society, 2017, 466, 1868-1879.	4.4	61
18	Anomalous magnetosheath properties during Earth passage of an interplanetary magnetic cloud. Journal of Geophysical Research, 1995, 100, 19245.	3.3	57

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19	XUV-Exposed, Non-Hydrostatic Hydrogen-Rich Upper Atmospheres of Terrestrial Planets. Part II: Hydrogen Coronae and Ion Escape. Astrobiology, 2013, 13, 1030-1048.	3.0	53
20	Identifying the â€˜trueâ€™ radius of the hot sub-Neptune CoRoT-24b by mass-loss modelling. Monthly Notices of the Royal Astronomical Society: Letters, 2016, 461, L62-L66.	3.3	53
21	Solar System Magnetospheres. Space Science Reviews, 2005, 116, 227-298.	8.1	47
22	Geophysical and Atmospheric Evolution of Habitable Planets. Astrobiology, 2010, 10, 45-68.	3.0	47
23	Reconnection Rate for the Inhomogeneous Resistivity Petschek Model. Physical Review Letters, 2000, 84, 1455-1458.	7.8	45
24	MHD model of the flapping motions in the magnetotail current sheet. Journal of Geophysical Research, 2009, 114, .	3.3	45
25	Model of electron pressure anisotropy in the electron diffusion region of collisionless magnetic reconnection. Physics of Plasmas, 2010, 17, .	1.9	44
26	Effect of stellar wind induced magnetic fields on planetary obstacles of non-magnetized hot Jupiters. Monthly Notices of the Royal Astronomical Society, 2017, 470, 4330-4336.	4.4	44
27	Escape and fractionation of volatiles and noble gases from Mars-sized planetary embryos and growing protoplanets. Icarus, 2018, 307, 327-346.	2.5	43
28	Magnetic Double-Gradient Instability and Flapping Waves in a Current Sheet. Physical Review Letters, 2007, 99, 235003.	7.8	42
29	Plasma and Magnetic Field Parameters in the Vicinity of Shortâ€periodic Giant Exoplanets. Astrophysical Journal, Supplement Series, 2005, 157, 396-401.	7.7	37
30	Magnetic double gradient mechanism for flapping oscillations of a current sheet. Geophysical Research Letters, 2008, 35, .	4.0	37
31	Solution for jump conditions at fast shocks in an anisotropic magnetized plasma. Journal of Plasma Physics, 2000, 64, 561-578.	2.1	35
32	Extreme hydrodynamic atmospheric loss near the critical thermal escape regime. Monthly Notices of the Royal Astronomical Society, 2015, 448, 1916-1921.	4.4	34
33	Close-in Sub-Neptunes Reveal the Past Rotation History of Their Host Stars: Atmospheric Evolution of Planets in the HD 3167 and K2-32 Planetary Systems. Astrophysical Journal, 2019, 879, 26.	4.5	33
34	Three-dimensional, one-fluid, ideal MHD model of magnetosheath flow with anisotropic pressure. Journal of Geophysical Research, 1999, 104, 6877-6887.	3.3	32
35	Aerosol Constraints on the Atmosphere of the Hot Saturn-mass Planet WASP-49b. Astrophysical Journal, 2017, 849, 145.	4.5	32
36	Solar XUV and ENAâ€driven water loss from early Venus' steam atmosphere. Journal of Geophysical Research: Space Physics, 2016, 121, 4718-4732.	2.4	31

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37	Young planets under extreme UV irradiation. Astronomy and Astrophysics, 2018, 612, A25.	5.1	29
38	Aspects of MHD flow about Venus. Journal of Geophysical Research, 1999, 104, 12617-12626.	3.3	28
39	The Kepler-11 system: evolution of the stellar high-energy emission and initial planetary atmospheric mass fractions. Astronomy and Astrophysics, 2019, 632, A65.	5.1	28
40	Dust kinetic AlfvÃ©n and acoustic waves in a Lorentzian plasma. Physics of Plasmas, 2009, 16, .	1.9	27
41	Roche lobe effects on expanded upper atmospheres of short-periodic giant exoplanets. Astronomy and Astrophysics, 2005, 439, 771-775.	5.1	26
42	Ideal MHD flow behind interplanetary shocks driven by magnetic clouds. Journal of Geophysical Research, 1995, 100, 19919.	3.3	25
43	Effects on the Jovian magnetosheath arising from solar wind flow around nonaxisymmetric bodies. Journal of Geophysical Research, 1996, 101, 10665-10672.	3.3	25
44	MHD model of magnetosheath flow: comparison with AMPTE/IRM observations on 24 October, 1985. Annales Geophysicae, 1998, 16, 518-527.	1.6	25
45	MHD modeling of the doubleâ€gradient (kink) magnetic instability. Journal of Geophysical Research: Space Physics, 2013, 118, 1146-1158.	2.4	25
46	Scaling of the inner electron diffusion region in collisionless magnetic reconnection. Journal of Geophysical Research, 2012, 117, .	3.3	23
47	Jump conditions for pressure anisotropy and comparison with the Earth's bow shock. Nonlinear Processes in Geophysics, 2001, 8, 167-174.	1.3	22
48	Shear driven waves in the induced magnetosphere of Mars. Plasma Physics and Controlled Fusion, 2008, 50, 074018.	2.1	22
49	Origin and Stability of Exomoon Atmospheres: Implications for Habitability. Origins of Life and Evolution of Biospheres, 2014, 44, 239-260.	1.9	21
50	Anisotropic magnetosheath: Comparison of theory with Wind observations near the stagnation streamline. Journal of Geophysical Research, 2001, 106, 29373-29385.	3.3	20
51	Impact induced surface heating by planetesimals on early Mars. Astronomy and Astrophysics, 2015, 574, A22.	5.1	19
52	Plasma depletion layer model for low AlfvÃ©n Mach number: Comparison with ISEE observations. Journal of Geophysical Research, 1997, 102, 11315-11324.	3.3	18
53	MHD aspect of current sheet oscillations related to magnetic field gradients. Annales Geophysicae, 2009, 27, 417-425.	1.6	18
54	Influence of a density increase on the evolution of the Kelvinâ€“Helmholtz instability and vortices. Physics of Plasmas, 2010, 17, 072901.	1.9	18

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55	On accelerated magnetosheath flows under northward IMF. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	18
56	On the ultraviolet anomalies of the WASP-12 and HD 189733 systems: Trojan satellites as a plasma source. Monthly Notices of the Royal Astronomical Society, 2016, 461, 988-999.	4.4	18
57	Transit Lyman-Î± signatures of terrestrial planets in the habitable zones of M dwarfs. Astronomy and Astrophysics, 2019, 623, A131.	5.1	18
58	The 2.5â€Ð analytical model of steadyâ€štate Hall magnetic reconnection. Journal of Geophysical Research, 2008, 113, .	3.3	17
59	The role of magnetic handedness in magnetic cloud propagation. Annales Geophysicae, 2010, 28, 1075-1100.	1.6	17
60	Modeling the LyÎ± transit absorption of the hot Jupiter HD 189733b. Astronomy and Astrophysics, 2020, 638, A49.	5.1	17
61	Magnetosheath parameters and reconnection: a case study for the near-cusp region and the equatorial flank. Planetary and Space Science, 1995, 43, 1105-1120.	1.7	14
62	On the effects of solar wind dynamic pressure on the anisotropic terrestrial magnetosheath. Journal of Geophysical Research, 2000, 105, 115-127.	3.3	14
63	Kinetic Alfven wave instability in a Lorentzian dusty plasma: Non-resonant particle approach. Physics of Plasmas, 2011, 18, .	1.9	14
64	Supermassive hot Jupiters provide more favourable conditions for the generation of radio emission via the cyclotron maser instability â€“ a case study based on Tau Bootis b. Monthly Notices of the Royal Astronomical Society, 2018, 480, 3680-3688.	4.4	14
65	Possible plasma depletion layer ahead of an interplanetary ejecta. Journal of Geophysical Research, 1997, 102, 7087-7093.	3.3	13
66	Hall magnetohydrodynamic effects for current sheet flapping oscillations related to the magnetic double gradient mechanism. Physics of Plasmas, 2010, 17, .	1.9	13
67	How to distinguish between kink and sausage modes in flapping oscillations?. Journal of Geophysical Research: Space Physics, 2014, 119, 3002-3015.	2.4	13
68	Modeling of Absorption by Heavy Minor Species for the Hot Jupiter HD 209458b. Astrophysical Journal, 2018, 866, 47.	4.5	13
69	Kinetic AlfvÃ©n wave instability in a Lorentzian dusty magnetoplasma. Physics of Plasmas, 2010, 17, 103704.	1.9	12
70	Accelerated magnetosheath flows caused by IMF draping: Dependence on latitude. Geophysical Research Letters, 2012, 39, .	4.0	12
71	A slow mode transition region adjoining the front boundary of a magnetic cloud as a relic of a convected solar wind feature: Observations and MHD simulation. Journal of Geophysical Research, 2008, 113, .	3.3	11
72	Magnetosheath for almostâ€aligned solar wind magnetic field and flow vectors: Wind observations across the dawnside magnetosheath at X = â˜'12 Re. Journal of Geophysical Research, 2010, 115, .	3.3	11

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73	The double-gradient magnetic instability: Stabilizing effect of the guide field. Physics of Plasmas, 2015, 22, 012904.	1.9	11
74	Nitrogen Atmospheres of the Icy Bodies in the Solar System. Space Science Reviews, 2020, 216, 1.	8.1	11
75	Ideal magnetohydrodynamic flow around a blunt body under anisotropic pressure. Physics of Plasmas, 2000, 7, 3413-3420.	1.9	10
76	Rate of steady-state reconnection in an incompressible plasma. Physics of Plasmas, 2001, 8, 4800-4809.	1.9	10
77	A 2.5-D electron Hall-MHD analytical model of steady state Hall magnetic reconnection in a compressible plasma. Journal of Geophysical Research, 2011, 116, .	3.3	10
78	Magnetohydrodynamic instability of a high magnetic shear layer with a finite curvature radius. Physics of Plasmas, 2002, 9, 401-408.	1.9	9
79	Influence of the Interplanetary Magnetic Field on the Solar Wind Flow about Planetary Obstacles. Space Science Reviews, 2006, 122, 209-219.	8.1	8
80	Kink-like mode of a double gradient instability in a compressible plasma current sheet. Advances in Space Research, 2011, 48, 1531-1536.	2.6	8
81	Features of the interaction of interplanetary coronal mass ejections/magnetic clouds with the Earth's magnetosphere. Journal of Atmospheric and Solar-Terrestrial Physics, 2013, 99, 14-26.	1.6	8
82	Escape and evolution of Titanâ€™s N2 atmosphere constrained by 14N/15N isotope ratios. Monthly Notices of the Royal Astronomical Society, 2020, 500, 2020-2035.	4.4	8
83	Recent Work on the Kelvin-Helmholtz Instability at the Dayside Magnetopause and Boundary Layer. , 1998, , 1-14.		8
84	Two-dimensional MHD model of the reconnection diffusion region. Nonlinear Processes in Geophysics, 2002, 9, 131-138.	1.3	7
85	2.5D magnetohydrodynamic simulation of the Kelvin-Helmholtz instability around Venusâ€”Comparison of the influence of gravity and density increase. Physics of Plasmas, 2012, 19, .	1.9	7
86	Stability of Earth-Like N2 Atmospheres: Implications for Habitability. Thirty Years of Astronomical Discovery With UKIRT, 2013, , 33-52.	0.3	7
87	Effects of MHD slow shocks propagating along magnetic flux tubes in a dipole magnetic field. Nonlinear Processes in Geophysics, 2002, 9, 163-172.	1.3	6
88	Influence of Îº-distributed ions on the two-stream instability. Physics of Plasmas, 2005, 12, 102103.	1.9	6
89	The Exosphere as a Boundary: Origin and Evolution of Airless Bodies in the Inner Solar System and Beyond Including Planets with Silicate Atmospheres. Space Science Reviews, 2022, 218, 1.	8.1	6
90	Peculiarities of AlfvÃ©n wave propagation along a nonuniform magnetic flux tube. Physics of Plasmas, 2005, 12, 012905.	1.9	5

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91	Current sheet oscillations in the magnetic filament approach. Physics of Plasmas, 2012, 19, 062905.	1.9	5
92	Numerical linearized MHD model of flapping oscillations. Physics of Plasmas, 2016, 23, 062905.	1.9	5
93	On the influence of the local maxima of total pressure on the current sheet stability to the kink-like (flapping) mode. Physics of Plasmas, 2018, 25, .	1.9	5
94	On application of asymmetric Kan-like exact equilibria to the Earth magnetotail modeling. Annales Geophysicae, 2018, 36, 641-653.	1.6	5
95	Current sheet bending as destabilizing factor in magnetotail dynamics. Physics of Plasmas, 2018, 25, .	1.9	5
96	The Inertiaâ€Based Model for Reconstruction of the Electron Diffusion Region. Journal of Geophysical Research: Space Physics, 2021, 126, e2020JA029045.	2.4	5
97	Stellar Driven Evolution of Hydrogen-Dominated Atmospheres from Earth-Like to Super-Earth-Type Exoplanets. Astrophysics and Space Science Library, 2015, , 137-151.	2.7	5
98	Deep Solar Activity Minimum 2007â€‰â€“â€‰2009: Solar Wind Properties and Major Effects on the Terrestrial Magnetosphere. Solar Physics, 2012, 281, 461.	2.5	4
99	Observational aspects of IMF draping-related magnetosheath accelerations for northward IMF. Annales Geophysicae, 2013, 31, 1779-1789.	1.6	4
100	Relations Between v_z and B_x Components in Solar Wind and their Effect on Substorm Onset. Geophysical Research Letters, 2018, 45, 3760-3767.	4.0	4
101	Gradâ€“Shafranov reconstruction of the magnetic configuration in the reconnection X-point vicinity in compressible plasma. Physics of Plasmas, 2020, 27, .	1.9	4
102	Comparison of Gasdynamics and MHD Predictions for Magnetosheath Flow. , 1998, , 27-40.		4
103	MHD effects of the solar wind flow around planets. Nonlinear Processes in Geophysics, 2000, 7, 201-210.	1.3	3
104	Stellar-Planetary Relations: Atmospheric Stability as a Prerequisite for Planetary Habitability. Celestial Mechanics and Dynamical Astronomy, 2005, 92, 273-285.	1.4	3
105	Shear driven waves in the induced magnetosphere of Mars: parameter dependence. Astrophysics and Space Sciences Transactions, 2009, 5, 39-42.	1.0	3
106	Aspects of solar wind interaction with Mars: comparison of fluid and hybrid simulations. Annales Geophysicae, 2007, 25, 145-159.	1.6	2
107	A statistical survey of reconnection exhausts in the solar wind based on the Riemannian decay of current sheets. Journal of Geophysical Research: Space Physics, 2015, 120, 8194-8209.	2.4	2
108	Peculiarities of magnetic barrier formation for southward and northward directions of the IMF. Journal of Geophysical Research: Space Physics, 2015, 120, 9471-9483.	2.4	2

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109	The Asymmetry of Magnetospheric Configuration and Substorms Occurrence Rate Within a Solar Activity Cycle. Springer Proceedings in Earth and Environmental Sciences, 2022, , 451-464.	0.4	2
110	Dayside magnetopause erosion on geostationary orbit using WIND and GOES data (1996-1999). , 2002, 4678, 523.		1
111	Interchange instability of a curved current layerconvecting in the magnetosheath from the bow shock towards themagnetopause. Annales Geophysicae, 2004, 22, 993-999.	1.6	1
112	Largeâ€scale energy budget of impulsive magnetic reconnection: Theory and simulation. Journal of Geophysical Research: Space Physics, 2017, 122, 3212-3231.	2.4	1
113	The transition from â€œdouble-gradientâ€•to ballooning unstable mode in bent magnetotail-like current sheet. Physics of Plasmas, 2019, 26, .	1.9	1
114	Can Radio Emission Escape from the Magnetosphere of Ï… andromedae b - a new method to constrain the minimum mass of hot jupiters. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	1
115	Some signatures of magnetic field line reconnection. , 2002, , .		0
116	Analysis of an inclined fast shock including pressure anisotropy. , 2002, 4678, 513.		0
117	Influence of the curvature and thickness of the magnetopause on its instability. , 2002, , .		0
118	Electric potential difference due to MHD slow shocks propagating along the Io flux tube. , 2002, , .		0
119	Propagation of slow MHD waves along the dipole magnetic tubes. , 2002, , .		0
120	Slow mode structure in the nightside magnetosheath related to IMF draping. Journal of Geophysical Research: Space Physics, 2014, 119, 1121-1128.	2.4	0
121	Flapping oscillations of the bent current sheet. Advances in Space Research, 2015, 56, 1699-1706.	2.6	0
122	Global kinetic hybrid simulation for radially expanding solar wind. Journal of Geophysical Research: Space Physics, 2017, 122, 7854-7864.	2.4	0