Jan Egedal

List of Publications by Year
in descending order

97 papers	2,880 citations	136950 32 h-index	182427 51 g-index
100 all docs	100 docs citations	100 times ranked	1644 citing authors

#	Article	IF	Citations
1	Large-scale electron acceleration by parallel electric fields during magnetic reconnection. Nature Physics, 2012, 8, 321-324.	16.7	191
2	A review of pressure anisotropy caused by electron trapping in collisionless plasma, and its implications for magnetic reconnection. Physics of Plasmas, 2013, 20, .	1.9	143
3	Evidence and theory for trapped electrons in guide field magnetotail reconnection. Journal of Geophysical Research, 2008, 113, .	3.3	124
4	Fast-Ion Velocity Distributions in JET Measured by Collective Thomson Scattering. Physical Review Letters, 1999, 83, 3206-3209.	7.8	111
5	Regimes of the Electron Diffusion Region in Magnetic Reconnection. Physical Review Letters, 2013, 110, 135004.	7.8	101
6	In SituDiscovery of an Electrostatic Potential, Trapping Electrons and Mediating Fast Reconnection in the Earth's Magnetotail. Physical Review Letters, 2005, 94, 025006.	7.8	94
7	Equations of State for Collisionless Guide-Field Reconnection. Physical Review Letters, 2009, 102, 085001.	7.8	87
8	Laboratory Observations of Spontaneous Magnetic Reconnection. Physical Review Letters, 2007, 98, 015003.	7.8	86
9	Currents and associated electron scattering and bouncing near the diffusion region at Earth's magnetopause. Geophysical Research Letters, 2016, 43, 3042-3050.	4.0	81
10	Double layer electric fields aiding the production of energetic flat-top distributions and superthermal electrons within magnetic reconnection exhausts. Physics of Plasmas, 2015, 22, .	1.9	72
11	Kinetic Structure of the Electron Diffusion Region in Antiparallel Magnetic Reconnection. Physical Review Letters, 2011, 106, 065002.	7.8	69
12	Laboratory Observation of Electron Phase-Space Holes during Magnetic Reconnection. Physical Review Letters, 2008, 101, 255003.	7.8	65
13	Cluster observations of bidirectional beams caused by electron trapping during antiparallel reconnection. Journal of Geophysical Research, 2010, 115, .	3.3	58
14	Enhanced electron mixing and heating in 3â€Ð asymmetric reconnection at the Earth's magnetopause. Geophysical Research Letters, 2017, 44, 2096-2104.	4.0	56
15	The Wisconsin Plasma Astrophysics Laboratory. Journal of Plasma Physics, 2015, 81, .	2.1	54
16	Formation of a localized acceleration potential during magnetic reconnection with a guide field. Physics of Plasmas, 2009, 16, .	1.9	52
17	Electron Crescent Distributions as a Manifestation of Diamagnetic Drift in an Electronâ€Scale Current Sheet: Magnetospheric Multiscale Observations Using New 7.5Âms Fast Plasma Investigation Moments. Geophysical Research Letters, 2018, 45, 578-584.	4.0	52
18	The national spherical torus experiment (NSTX) research programme and progress towards high beta, long pulse operating scenarios. Nuclear Fusion, 2003, 43, 1653-1664.	3.5	49

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19	Universality of Lower Hybrid Waves at Earth's Magnetopause. Journal of Geophysical Research: Space Physics, 2019, 124, 8727-8760.	2.4	45
20	Plasma generation and confinement in a toroidal magnetic cusp. Review of Scientific Instruments, 2000, 71, 3351-3361.	1.3	44
21	Electron dynamics in two-dimensional asymmetric anti-parallel reconnection. Physics of Plasmas, 2011, 18, .	1.9	44
22	Experimental Demonstration of the Collisionless Plasmoid Instability below the Ion Kinetic Scale during Magnetic Reconnection. Physical Review Letters, 2016, 116, 255001.	7.8	44
23	Magnitude of the Hall fields during magnetic reconnection. Geophysical Research Letters, 2010, 37, .	4.0	43
24	Laboratory Observation of Localized Onset of Magnetic Reconnection. Physical Review Letters, 2010, 104, 255004.	7.8	42
25	Spacecraft Observations and Analytic Theory of Crescent-Shaped Electron Distributions in Asymmetric Magnetic Reconnection. Physical Review Letters, 2016, 117, 185101.	7.8	42
26	Daily Variation of the Horizontal Magnetic Force at the Magnetic Equator. Nature, 1948, 161, 443-444.	27.8	39
27	Phase space structure of the electron diffusion region in reconnection with weak guide fields. Physics of Plasmas, 2012, 19, .	1.9	37
28	Pressure Tensor Elements Breaking the Frozen-In Law During Reconnection in Earthâ€™s Magnetotail. Physical Review Letters, 2019, 123, 225101.	7.8	37
29	Cause of superâ€thermal electron heating during magnetotail reconnection. Geophysical Research Letters, 2010, 37, .	4.0	36
30	Hybrid simulations of magnetic reconnection with kinetic ions and fluid electron pressure anisotropy. Physics of Plasmas, 2016, 23, .	1.9	36
31	Demonstration of Anisotropic Fluid Closure Capturing the Kinetic Structure of Magnetic Reconnection. Physical Review Letters, 2012, 109, 115004.	7.8	35
32	Equations of state in collisionless magnetic reconnection. Physics of Plasmas, 2010, 17, .	1.9	33
33	Magnetic Pumping as a Source of Particle Heating and Power-law Distributions in the Solar Wind. Astrophysical Journal Letters, 2017, 850, L28.	8.3	32
34	Dynamical Plasma Response during Driven Magnetic Reconnection. Physical Review Letters, 2003, 90, 135003.	7.8	31
35	Fast ion millimeter wave collective Thomson scattering diagnostics on TEXTOR and ASDEX upgrades. Review of Scientific Instruments, 2004, 75, 3634-3636.	1.3	31
36	Impact of compressibility and a guide field on Fermi acceleration during magnetic island coalescence. Physics of Plasmas, 2017, 24, .	1.9	31

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37	Drift orbit topology of fast ions in tokamaks. Nuclear Fusion, 2000, 40, 1597-1610.	3.5	30
38	Laboratory observations of electron energization and associated lower-hybrid and Trivelpieceâ€“Gould wave turbulence during magnetic reconnection. Physics of Plasmas, 2010, 17, 072303.	1.9	30
39	Observations of electron phase-space holes driven during magnetic reconnection in a laboratory plasma. Physics of Plasmas, 2012, 19, .	1.9	28
40	Electron temperature of the solar wind. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 9232-9240.	7.1	27
41	Single-Particle Dynamics in Collisionless Magnetic Reconnection. Physical Review Letters, 2001, 86, 5047-5050.	7.8	25
42	Progress towards high-performance, steady-state spherical torus. Plasma Physics and Controlled Fusion, 2003, 45, A335-A350.	2.1	25
43	Collisionless magnetic reconnection in a toroidal cusp. Physics of Plasmas, 2001, 8, 1935-1943.	1.9	23
44	Fast ion absorption of the high harmonic fast wave in the National Spherical Torus Experiment. Physics of Plasmas, 2004, 11, 2441-2452.	1.9	23
45	Laser-Induced Fluorescence Measurement of the Ion-Energy-Distribution Function in a Collisionless Reconnection Experiment. Physical Review Letters, 2005, 95, 235005.	7.8	21
46	Two-stage bulk electron heating in the diffusion region of anti-parallel symmetric reconnection. Physics of Plasmas, 2016, 23, .	1.9	21
47	Spacecraft Observations of Oblique Electron Beams Breaking the Frozen-In Law During Asymmetric Reconnection. Physical Review Letters, 2018, 120, 055101.	7.8	20
48	Magnetic pumping model for energizing superthermal particles applied to observations of the Earth's bow shock. Nature Communications, 2020, 11, 2942.	12.8	20
49	Experimental evidence of fast reconnection via trapped electron motion. Physics of Plasmas, 2004, 11, 2844-2851.	1.9	19
50	First results of collective scattering on JET (invited). Review of Scientific Instruments, 1997, 68, 275-280.	1.3	18
51	Reconstruction of gyrotropic phase-space distributions from one-dimensional projections. Physics of Plasmas, 2004, 11, 2191-2198.	1.9	18
52	Fast ion collective Thomson scattering, JET results and TEXTOR plans. Fusion Engineering and Design, 2001, 53, 105-111.	1.9	16
53	Transition in electron physics of magnetic reconnection in weakly collisional plasma. Journal of Plasma Physics, 2015, 81, .	2.1	16
54	Structure of a Perturbed Magnetic Reconnection Electron Diffusion Region in the Earthâ€™s Magnetotail. Physical Review Letters, 2021, 127, 215101.	7.8	15

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55	Weakly Magnetized, Hall Dominated Plasma Couette Flow. Physical Review Letters, 2020, 125, 135001.	7.8	14
56	Impact of beam ions on Î±-particle measurements by collective Thomson scattering in ITER. Nuclear Fusion, 2005, 45, 191-200.	3.5	13
57	Upperâ€Hybrid Waves Driven by Meandering Electrons Around Magnetic Reconnection X Line. Geophysical Research Letters, 2021, 48, e2021GL093164.	4.0	13
58	Three-dimensional stability of current sheets supported by electron pressure anisotropy. Physics of Plasmas, 2019, 26, .	1.9	12
59	Efficient evaluation of beam ion confinement in spherical tokamaks. Physics of Plasmas, 2003, 10, 2372-2381.	1.9	11
60	Spontaneous onset of magnetic reconnection in toroidal plasma caused by breaking of 2D symmetry. Physics of Plasmas, 2011, 18, .	1.9	11
61	Processes setting the structure of the electron distribution function within the exhausts of anti-parallel reconnection. Physics of Plasmas, 2016, 23, .	1.9	11
62	A laboratory model for the Parker spiral and magnetized stellar winds. Nature Physics, 2019, 15, 1095-1100.	16.7	9
63	Regulation of the normalized rate of driven magnetic reconnection through shocked flux pileup. Journal of Plasma Physics, 2021, 87, .	2.1	9
64	Scaling laws for magnetic reconnection, set by regulation of the electron pressure anisotropy to the firehose threshold. Geophysical Research Letters, 2015, 42, 10,549-10,556.	4.0	8
65	Theory of ion dynamics and heating by magnetic pumping in FRC plasma. Physics of Plasmas, 2018, 25, .	1.9	8
66	Validation of Anisotropic Electron Fluid Closure Through In Situ Spacecraft Observations of Magnetic Reconnection. Geophysical Research Letters, 2019, 46, 6223-6229.	4.0	8
67	An Encounter With the Ion and Electron Diffusion Regions at a Flapping and Twisted Tail Current Sheet. Journal of Geophysical Research: Space Physics, 2021, 126, e2020JA028903.	2.4	8
68	A drift kinetic model for the expander region of a magnetic mirror. Physics of Plasmas, 2021, 28, 042510.	1.9	8
69	Laboratory Verification of Electronâ€Scale Reconnection Regions Modulated by a Threeâ€Dimensional Instability. Journal of Geophysical Research: Space Physics, 2021, 126, e2021JA029316.	2.4	8
70	The topology of guiding center orbits in a linear magnetic cusp. Physics of Plasmas, 2001, 8, 4042-4052.	1.9	7
71	A drift kinetic approach to stationary collisionless magnetic reconnection in an open cusp plasma. Physics of Plasmas, 2002, 9, 1095-1103.	1.9	7
72	Experimental investigation of the trigger problem in magnetic reconnection. Physics of Plasmas, 2011, 18, 055707.	1.9	7

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73	Twoâ€Đimensional Velocity of the Magnetic Structure Observed on July 11, 2017 by the Magnetospheric Multiscale Spacecraft. Journal of Geophysical Research: Space Physics, 2021, 126, e2020JA028705.	2.4	7
74	Kinetic simulation of the VTF magnetic reconnection experiment. Computer Physics Communications, 2004, 164, 29-33.	7.5	6
75	Shear AlfvÃ©n Waves Driven by Magnetic Reconnection as an Energy Source for the Aurora Borealis. Geophysical Research Letters, 2021, 48, e2021GL094201.	4.0	6
76	Topology of relativistic refractive index surfaces for electron cyclotron waves. Plasma Physics and Controlled Fusion, 1994, 36, 543-559.	2.1	5
77	Anisotropic Electron Fluid Closure Validated by in Situ Spacecraft Observations in the far Exhaust of Guideâ€field Reconnection. Journal of Geophysical Research: Space Physics, 2021, 126, .	2.4	5
78	Parallel velocity mixing yielding enhanced electron heating during magnetic pumping. Journal of Plasma Physics, 2021, 87, .	2.1	5
79	The fast transit-time limit of magnetic pumping with trapped electrons. Journal of Plasma Physics, 2021, 87, .	2.1	5
80	Measurements at sea of the vertical gradient of the main geomagnetic field during theGalatheaexpedition. Journal of Geophysical Research, 1956, 61, 593-624.	3.3	4
81	The lunar-diurnal magnetic variation and its relation to the solar-diurnal variation. Journal of Geophysical Research, 1956, 61, 748-749.	3.3	4
82	Linewidth measurements of the JET energetic ion and alpha particle collective Thomson scattering diagnostic gyrotron. Review of Scientific Instruments, 1999, 70, 1154-1157.	1.3	4
83	The orbit averaged particle source from neutral beam injection in tokamaks. Nuclear Fusion, 2005, 45, 184-190.	3.5	4
84	Influence of Inflow Density and Temperature Asymmetry on the Formation of Electron Jets during Magnetic Reconnection. Geophysical Research Letters, 2020, 47, e2020GL087612.	4.0	4
85	Electron Mixing and Isotropization in the Exhaust of Asymmetric Magnetic Reconnection With a Guide Field. Geophysical Research Letters, 2020, 47, e2020GL087159.	4.0	4
86	Generation of a Strong Parallel Electric Field and Embedded Electron Jet in the Exhaust of Moderate Guide Field Reconnection. Geophysical Research Letters, 2022, 49, .	4.0	4
87	Laminar and turbulent plasmoid ejection in a laboratory Parker Spiral current sheet. Journal of Plasma Physics, 2021, 87, .	2.1	3
88	Pitch angle scattering of fast particles by low frequency magnetic fluctuations. Physics of Plasmas, 2022, 29, .	1.9	3
89	Calibration of the Joint European Torus energetic ion and alpha particle collective Thomson scattering diagnostic receiver. Review of Scientific Instruments, 1999, 70, 1167-1170.	1.3	2
90	An experimental study of the gridded electromagnet probe. Physics of Plasmas, 2004, 11, 2236-2245.	1.9	2

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91	Exploiting Laboratory and Heliophysics Plasma Synergies. Energies, 2010, 3, 1014-1048.	3.1	2
92	A Driftâ€Kinetic Method for Obtaining Gradients in Plasma Properties From Singleâ€Point Distribution Function Data. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA027965.	2.4	2
93	Laboratory Resolved Structure of Supercritical Perpendicular Shocks. Physical Review Letters, 2021, 126, 145001.	7.8	2
94	Ion Heating and Flow Driven by an Instability Found in Plasma Couette Flow. Physical Review Letters, 2021, 126, 185002.	7.8	2
95	Circular letter No. 3 of committee to promote observations of the daily variation of the horizontal magnetic force between and near the geographic and magnetic equators. Journal of Geophysical Research, 1950, 55, 98-100.	3.3	1
96	On V'ariations of Mean Temperatures of the Air. Geografiska Annaler, 1941, 23, 125.	0.1	0
97	Development towards a fast ion loss detector for the reversed field pinch. Review of Scientific Instruments, 2016, 87, 11D824.	1.3	0