Per Helander

List of Publications by Year
in descending order

104 papers	3,459 citations	101543 36 h-index	155660 55 g-index
106 all docs	106 docs citations	106 times ranked	1503 citing authors

#	Article	IF	Citations
1	Theory of plasma confinement in non-axisymmetric magnetic fields. Reports on Progress in Physics, 2014, 77, 087001.	20.1	206
2	Overview of first Wendelstein 7-X high-performance operation. Nuclear Fusion, 2019, 59, 112004.	3.5	165
3	Major results from the first plasma campaign of the Wendelstein 7-X stellarator. Nuclear Fusion, 2017, 57, 102020.	3.5	128
4	Stellarator and tokamak plasmas: a comparison. Plasma Physics and Controlled Fusion, 2012, 54, 124009.	2.1	111
5	Magnetic configuration effects on the Wendelstein 7-X stellarator. Nature Physics, 2018, 14, 855-860.	16.7	110
6	Confirmation of the topology of the Wendelstein 7-X magnetic field to better than 1:100,000. Nature Communications, 2016, 7, 13493.	12.8	85
7	Performance of Wendelstein 7-X stellarator plasmas during the first divertor operation phase. Physics of Plasmas, 2019, 26, .	1.9	83
8	Intrinsic Ambipolarity and Rotation in Stellarators. Physical Review Letters, 2008, 101, 145003.	7.8	79
9	Comparison of particle trajectories and collision operators for collisional transport in nonaxisymmetric plasmas. Physics of Plasmas, 2014, 21, .	1.9	79
10	Technical challenges in the construction of the steady-state stellarator Wendelstein 7-X. Nuclear Fusion, 2013, 53, 126001.	3.5	77
11	Neoclassical transport of heavy impurities with poloidally asymmetric density distribution in tokamaks. Plasma Physics and Controlled Fusion, 2014, 56, 124001.	2.1	74
12	Damping of relativistic electron beams by synchrotron radiation. Physics of Plasmas, 2001, 8, 5221-5229.	1.9	70
13	Controlling Turbulence in Present and Future Stellarators. Physical Review Letters, 2014, 113, 155001.	7.8	70
14	Current Dynamics during Disruptions in Large Tokamaks. Physical Review Letters, 2004, 92, 205004.	7.8	69
15	Demonstration of reduced neoclassical energy transport in Wendelstein 7-X. Nature, 2021, 596, 221-226.	27.8	69
16	Fast particle confinement with optimized coil currents in the W7-X stellarator. Nuclear Fusion, 2014, 54, 073002.	3.5	67
17	Fluid equations for a partially ionized plasma. Physics of Plasmas, 1994, 1, 3174-3180.	1.9	65
18	Nonlinear neoclassical transport in a rotating impure plasma with large gradients. Physics of Plasmas, 1999, 6, 3066-3075.	1.9	64

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19	Destabilization of magnetosonic-whistler waves by a relativistic runaway beam. Physics of Plasmas, 2006, 13, 062506.	1.9	61
20	Bifurcated neoclassical particle transport. Physics of Plasmas, 1998, 5, 3999-4004.	1.9	59
21	Runaway electrons and the evolution of the plasma current in tokamak disruptions. Physics of Plasmas, 2006, 13, 102502.	1.9	59
22	Resilience of Quasi-Isodynamic Stellarators against Trapped-Particle Instabilities. Physical Review Letters, 2012, 108, 245002.	7.8	59
23	Properties of a new quasi-axisymmetric configuration. Nuclear Fusion, 2019, 59, 026014.	3.5	58
24	Towards assembly completion and preparation of experimental campaigns of Wendelstein 7-X in the perspective of a path to a stellarator fusion power plant. Fusion Engineering and Design, 2013, 88, 461-465.	1.9	56
25	The impact of poloidal asymmetries on tungsten transport in the core of JET H-mode plasmas. Physics of Plasmas, 2015, 22, 055902.	1.9	49
26	Runaway electron generation in a cooling plasma. Physics of Plasmas, 2005, 12, 122505.	1.9	47
27	Bootstrap current and neoclassical transport in quasi-isodynamic stellarators. Plasma Physics and Controlled Fusion, 2009, 51, 055004.	2.1	47
28	Microstability of Magnetically Confined Electron-Positron Plasmas. Physical Review Letters, 2014, 113, 135003.	7.8	45
29	Advances in stellarator gyrokinetics. Nuclear Fusion, 2015, 55, 053030.	3.5	42
30	Impurity Transport in a Mixed-Collisionality Stellarator Plasma. Physical Review Letters, 2017, 118, 155002.	7.8	41
31	Optimisation of stellarator equilibria with ROSE. Nuclear Fusion, 2019, 59, 016010.	3.5	41
32	Collisionless microinstabilities in stellarators. III. The ion-temperature-gradient mode. Physics of Plasmas, 2014, 21, .	1.9	40
33	Electrostatic potential variation on the flux surface and its impact on impurity transport. Nuclear Fusion, 2017, 57, 056004.	3.5	39
34	Collisionless microinstabilities in stellarators. I. Analytical theory of trapped-particle modes. Physics of Plasmas, 2013, 20, 122505.	1.9	38
35	Electron kinetics in a cooling plasma. Physics of Plasmas, 2004, 11, 5704-5709.	1.9	37
36	ESTELL: A Quasiâ€Toroidally Symmetric Stellarator. Contributions To Plasma Physics, 2013, 53, 459-468.	1.1	37

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37	Existence of three-dimensional ideal-magnetohydrodynamic equilibria with current sheets. Physics of Plasmas, 2015, 22, .	1.9	37
38	Suppression of electrostatic micro-instabilities in maximum-J stellarators. Plasma Physics and Controlled Fusion, 2020, 62, 035005.	2.1	37
39	Turbulence Mechanisms of Enhanced Performance Stellarator Plasmas. Physical Review Letters, 2020, 125, 075001.	7.8	32
40	A new frontier in laboratory physics: magnetized electronâ€“positron plasmas. Journal of Plasma Physics, 2020, 86, .	2.1	31
41	Necessary and sufficient conditions for quasisymmetry. Physics of Plasmas, 2020, 27, .	1.9	30
42	Collisionless microinstabilities in stellarators. II. Numerical simulations. Physics of Plasmas, 2013, 20, .	1.9	29
43	Understanding detachment of the W7-X island divertor. Nuclear Fusion, 2021, 61, 086012.	3.5	29
44	Resistive stability of a plasma with runaway electrons. Physics of Plasmas, 2007, 14, .	1.9	28
45	Stellarators with Permanent Magnets. Physical Review Letters, 2020, 124, 095001.	7.8	28
46	On the bootstrap current in stellarators and tokamaks. Physics of Plasmas, 2011, 18, .	1.9	26
47	Quasi-axisymmetric magnetic fields: weakly non-axisymmetric case in a vacuum. Journal of Plasma Physics, 2018, 84, .	2.1	26
48	Electrostatic potential variations along flux surfaces in stellarators. Nuclear Fusion, 2015, 55, 052001.	3.5	24
49	Gyrokinetic stability theory of electronâ€“positron plasmas. Journal of Plasma Physics, 2016, 82, .	2.1	24
50	Available energy and ground states of collisionless plasmas. Journal of Plasma Physics, 2017, 83, .	2.1	24
51	Analysis of electron cyclotron emission with extended electron cyclotron forward modeling. Plasma Physics and Controlled Fusion, 2018, 60, 105010.	2.1	24
52	Experimental confirmation of efficient island divertor operation and successful neoclassical transport optimization in Wendelstein 7-X. Nuclear Fusion, 2022, 62, 042022.	3.5	24
53	Direct construction of optimized stellarator shapes. Part 3. Omnigenity near the magneticÂaxis. Journal of Plasma Physics, 2019, 85, .	2.1	23
54	Equilibrium ?-limits in classical stellarators. Journal of Plasma Physics, 2017, 83, .	2.1	22

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55	Passive runaway electron suppression in tokamak disruptions. Physics of Plasmas, 2013, 20, .	1.9	20
56	Threshold for the destabilisation of the ion-temperature-gradient mode in magnetically confined toroidal plasmas. Journal of Plasma Physics, 2018, 84, .	2.1	20
57	Kinetic ballooning modes in tokamaks andÂstellarators. Journal of Plasma Physics, 2018, 84, .	2.1	20
58	Runaway electron generation during plasma shutdown by killer pellet injection. Plasma Physics and Controlled Fusion, 2008, 50, 055006.	2.1	19
59	On the W7-X divertor performance under detached conditions. Nuclear Fusion, 2016, 56, 126011.	3.5	18
60	Neoclassical momentum transport in a collisional stellarator and a rippled tokamak. Physics of Plasmas, 2009, 16, 042503.	1.9	17
61	Impurity transport and bulk ion flow in a mixed collisionality stellarator plasma. Journal of Plasma Physics, 2017, 83, .	2.1	17
62	Effect of plasma elongation on current dynamics during tokamak disruptions. Journal of Plasma Physics, 2020, 86, .	2.1	15
63	Collisionless microinstabilities in stellarators. Part 4. The ion-driven trapped-electron mode. Journal of Plasma Physics, 2017, 83, .	2.1	14
64	Quasilinear particle transport from gyrokinetic instabilities in general magnetic geometry. Plasma Physics and Controlled Fusion, 2018, 60, 084006.	2.1	14
65	Relativistic electron distribution function of a plasma in a near-critical electric field. Physics of Plasmas, 2006, 13, 072108.	1.9	12
66	Generation of electrostatic oscillations in the ion cyclotron frequency range by modulated ECRH. Nuclear Fusion, 2018, 58, 104003.	3.5	12
67	Combined plasmaâ€“coil optimization algorithms. Journal of Plasma Physics, 2021, 87, .	2.1	12
68	Plasma rotation in a quasi-symmetric stellarator. Plasma Physics and Controlled Fusion, 2011, 53, 024005.	2.1	11
69	The universal instability in general geometry. Physics of Plasmas, 2015, 22, .	1.9	11
70	Stellarator bootstrap current and plasma flow velocity at low collisionality. Journal of Plasma Physics, 2017, 83, .	2.1	11
71	Plasma ion heating by cryogenic pellet injection. Journal of Plasma Physics, 2019, 85, .	2.1	11
72	Available energy of magnetically confinedÂplasmas. Journal of Plasma Physics, 2020, 86, .	2.1	11

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73	Turbulence mitigation in maximum-J stellarators with electron-density gradient. Journal of Plasma Physics, 2022, 88, .	2.1	11
74	Available Energy of Trapped Electrons and Its Relation to Turbulent Transport. Physical Review Letters, 2022, 128, 175001.	7.8	11
75	Electrostatic stability of electronâ€“positron plasmas in dipole geometry. Journal of Plasma Physics, 2018, 84, .	2.1	10
76	Gyrokinetic stability of electronâ€“positronâ€“ion plasmas. Journal of Plasma Physics, 2018, 84, .	2.1	10
77	Study of upâ€“down poloidal density asymmetry of high- impurities with the new impurity version of XGCa. Journal of Plasma Physics, 2019, 85, .	2.1	10
78	Improving fast-particle confinement in quasi-axisymmetric stellarator optimization. Plasma Physics and Controlled Fusion, 2020, 62, 014023.	2.1	10
79	Self-similar expansion of a plasmoid supplied by pellet ablation. Plasma Physics and Controlled Fusion, 2021, 63, 095008.	2.1	8
80	Curvature particle pinch in tokamak and stellarator geometry. Physics of Plasmas, 2007, 14, 102308.	1.9	7
81	Collisionality dependence of the quasilinear particle flux due to microinstabilities. Physics of Plasmas, 2008, 15, 072308.	1.9	7
82	Linear electrostatic gyrokinetics for electronâ€“positron plasmas. Journal of Plasma Physics, 2018, 84, .	2.1	7
83	Model for current drive induced crash cycles in W7-X. Nuclear Fusion, 2021, 61, 126040.	3.5	7
84	Tokamak current driven by poloidally asymmetric fueling. Physics of Plasmas, 2006, 13, 102506.	1.9	6
85	Available energy from diffusive and reversible phase space rearrangements. Physics of Plasmas, 2020, 27, .	1.9	6
86	Magnetic reconnection in 3D fusion devices: non-linear reduced equations and linear current-driven instabilities. Plasma Physics and Controlled Fusion, 2021, 63, 025001.	2.1	6
87	Linear gyrokinetics of electronâ€“positron plasmas in closed field-line systems. Journal of Plasma Physics, 2020, 86, .	2.1	5
88	W7-X and the sawtooth instability: towards realistic simulations of current-driven magnetic reconnection. Nuclear Fusion, 2021, 61, 086001.	3.5	5
89	Modelling of parallel dynamics of a pellet-produced plasmoid. Journal of Plasma Physics, 2021, 87, .	2.1	5
90	Representing the boundary of stellarator plasmas. Journal of Plasma Physics, 2021, 87, .	2.1	5

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91	Heat conduction in an irregular magnetic field. Part 2. Heat transport as a measure of the effective non-integrable volume. Journal of Plasma Physics, 2022, 88, .	2.1	5
92	Effect of the inductive electric field on ion flow in tokamaks. Physics of Plasmas, 2001, 8, 3334-3341.	1.9	4
93	Upper Bounds on Gyrokinetic Instabilities in Magnetized Plasmas. Physical Review Letters, 2021, 127, 155001.	7.8	4
94	Gyrokinetic Theory of Rotation in Stellarators. Contributions To Plasma Physics, 2010, 50, 695-700.	1.1	2
95	Bootstrap current and parallel ion velocity in imperfectly optimized stellarators. Journal of Plasma Physics, 2020, 86, .	2.1	2
96	Coulomb collisions in strongly anisotropic plasmas II. Cyclotron cooling in laboratory pair plasmas. Journal of Plasma Physics, 2021, 87, .	2.1	2
97	Coulomb collisions in strongly anisotropic plasmas I. Cyclotron cooling in electronâ€“ion plasmas. Journal of Plasma Physics, 2021, 87, .	2.1	2
98	Direct construction of optimized stellarator shapes. Part 3. Omnigenity near the magnetic axis â€“ ERRATUM. Journal of Plasma Physics, 2021, 87, .	2.1	2
99	On heat conduction in an irregular magnetic field. Part 1. Journal of Plasma Physics, 2022, 88, .	2.1	2
100	Energetic bounds on gyrokinetic instabilities. Part 1. Fundamentals. Journal of Plasma Physics, 2022, 88, .	2.1	2
101	Selective ECR heating of trapped/passing electrons in the W7-X stellarator. , 2014, , .		1
102	Effects of collisions on impurity transport driven by electrostatic modes. Journal of Plasma Physics, 2020, 86, .	2.1	1
103	Energetic bounds on gyrokinetic instabilities. Part 2. Modes of optimal growth. Journal of Plasma Physics, 2022, 88, .	2.1	1
104	Bootstrap current and parallel ion velocity in imperfectly optimized stellarators Corrigendum. Journal of Plasma Physics, 2020, 86, .	2.1	0