

# Matthias Hoelzl

## List of Publications by Year in descending order

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96  
papers

1,997  
citations

236925

25  
h-index

330143

37  
g-index

96  
all docs

96  
docs citations

96  
times ranked

1431  
citing authors

#	ARTICLE	IF	CITATIONS
1	Physics of runaway electrons with shattered pellet injection at JET. Plasma Physics and Controlled Fusion, 2022, 64, 034002.	2.1	7
2	An E and B gyrokinetic simulation model for kinetic Alfvén waves in tokamak plasmas. Physics of Plasmas, 2022, 29, 022502.	1.9	1
3	Non-axisymmetric MHD simulations of the current quench phase of ITER mitigated disruptions. Nuclear Fusion, 2022, 62, 056023.	3.5	15
4	On the role of preexisting MHD activity for the plasma response to massive deuterium injection. Physics of Plasmas, 2022, 29, 032509.	1.9	1
5	A generalised formulation of G-continuous Bezier elements applied to non-linear MHD simulations. Journal of Computational Physics, 2022, 464, 111101.	3.8	4
6	MHD simulations of small ELMs at low triangularity in ASDEX Upgrade. Plasma Physics and Controlled Fusion, 2022, 64, 054011.	2.1	10
7	JOREK3D: An extension of the JOREK nonlinear MHD code to stellarators. Physics of Plasmas, 2022, 29, .	1.9	4
8	Confinement of passing and trapped runaway electrons in the simulation of an ITER current quench. Nuclear Fusion, 2022, 62, 086033.	3.5	9
9	Modeling of saturated external MHD instabilities in tokamaks: A comparison of 3D free boundary equilibria and nonlinear stability calculations. Physics of Plasmas, 2022, 29, 072303.	1.9	1
10	Magnetohydrodynamic simulations of runaway electron beam termination in JET. Plasma Physics and Controlled Fusion, 2021, 63, 035024.	2.1	21
11	Radiation asymmetry and MHD destabilization during the thermal quench after impurity shattered pellet injection. Nuclear Fusion, 2021, 61, 026015.	3.5	29
12	Experimental study of ELM induced fast-ion transport using passive FIDA spectroscopy at the ASDEX Upgrade tokamak. Nuclear Fusion, 2021, 61, 046001.	3.5	6
13	Interaction between filaments and ICRF in the plasma edge. Nuclear Materials and Energy, 2021, 26, 100941.	1.3	9
14	Transition from no-ELM response to pellet ELM triggering during pedestal build-up—insights from extended MHD simulations. Nuclear Fusion, 2021, 61, 046043.	3.5	5
15	Demonstration of Safe Termination of Megaampere Relativistic Electron Beams in Tokamaks. Physical Review Letters, 2021, 126, 175001.	7.8	41
16	Simulations of COMPASS vertical displacement events with a self-consistent model for halo currents including neutrals and sheath boundary conditions. Plasma Physics and Controlled Fusion, 2021, 63, 064004.	2.1	11
17	The JOREK non-linear extended MHD code and applications to large-scale instabilities and their control in magnetically confined fusion plasmas. Nuclear Fusion, 2021, 61, 065001.	3.5	85
18	Testing of the new JOREK stellarator-capable model in the tokamak limit. Journal of Plasma Physics, 2021, 87, .	2.1	5

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19	3D simulations of vertical displacement events in tokamaks: A benchmark of M3D-C1, NIMROD, and JOEUK. <i>Physics of Plasmas</i> , 2021, 28, .	1.9	19
20	Nonlinear MHD simulations of external kinks in quasi-axisymmetric stellarators using an axisymmetric external rotational transform approximation. <i>Nuclear Fusion</i> , 2021, 61, 076017.	3.5	3
21	Comparing spontaneous and pellet-triggered ELMs via non-linear extended MHD simulations. <i>Plasma Physics and Controlled Fusion</i> , 2021, 63, 075016.	2.1	7
22	Thermal quench and current profile relaxation dynamics in massive-material-injection-triggered tokamak disruptions. <i>Plasma Physics and Controlled Fusion</i> , 2021, 63, 115006.	2.1	13
23	The development of an implicit full f method for electromagnetic particle simulations of Alfvén waves and energetic particle physics. <i>Journal of Computational Physics</i> , 2021, 440, 110384.	3.8	12
24	Enhanced preconditioner for JOEUK MHD solver. <i>Plasma Physics and Controlled Fusion</i> , 2021, 63, 114002.	2.1	3
25	Collisional-radiative non-equilibrium impurity treatment for JOEUK simulations. <i>Plasma Physics and Controlled Fusion</i> , 2021, 63, 125003.	2.1	5
26	A novel path to runaway electron mitigation via deuterium injection and current-driven MHD instability. <i>Nuclear Fusion</i> , 2021, 61, 116058.	3.5	21
27	A mathematical model for calculation of the influence of ferromagnetic components in Vertical Displacement Events and stability simulations of tokamak plasmas. <i>Journal of Physics: Conference Series</i> , 2021, 1730, 012115.	0.4	1
28	A simulation chain for reflectometry and non-linear MHD: type-I ELM case. <i>Journal of Instrumentation</i> , 2021, 16, C12024.	1.2	3
29	Extended full-MHD simulation of non-linear instabilities in tokamak plasmas. <i>Physics of Plasmas</i> , 2020, 27, .	1.9	24
30	Simulations of edge localised mode instabilities in MAST-U Super-X tokamak plasmas. <i>Nuclear Fusion</i> , 2020, 60, 066021.	3.5	8
31	First predictive simulations for deuterium shattered pellet injection in ASDEX Upgrade. <i>Physics of Plasmas</i> , 2020, 27, 022510.	1.9	17
32	Axisymmetric simulations of vertical displacement events in tokamaks: A benchmark of M3D-C1, NIMROD, and JOEUK. <i>Physics of Plasmas</i> , 2020, 27, 022505.	1.9	18
33	Non-linear magnetohydrodynamic simulations of pellet triggered edge-localized modes in JET. <i>Nuclear Fusion</i> , 2020, 60, 026003.	3.5	9
34	Modeling of TAE mode excitation with an antenna in realistic X-point geometry. <i>Physics of Plasmas</i> , 2020, 27, 012507.	1.9	6
35	Understanding the reduction of the edge safety factor during hot VDEs and fast edge cooling events. <i>Physics of Plasmas</i> , 2020, 27, 032501.	1.9	13
36	Nonlinear modeling of the effect of $n=2$ resonant magnetic field perturbation on peeling-ballooning modes in KSTAR. <i>Nuclear Fusion</i> , 2020, 60, 026009.	3.5	15

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37	Parametric decay instabilities near the second-harmonic upper hybrid resonance in fusion plasmas. Nuclear Fusion, 2020, 60, 106008.	3.5	28
38	Fast plasma dilution in ITER with pure deuterium shattered pellet injection. Nuclear Fusion, 2020, 60, 126040.	3.5	23
39	Non-linear extended MHD simulations of type-I edge localised mode cycles in ASDEX Upgrade and their underlying triggering mechanism. Nuclear Fusion, 2020, 60, 124007.	3.5	27
40	Scattering of ion cyclotron range of frequency waves by filaments and ELMs. Nuclear Fusion, 2020, 60, 096001.	3.5	3
41	Overview of physics studies on ASDEX Upgrade. Nuclear Fusion, 2019, 59, 112014.	3.5	38
42	Simulating the nonlinear interaction of relativistic electrons and tokamak plasma instabilities: Implementation and validation of a fluid model. Physical Review E, 2019, 99, 063317.	2.1	26
43	Dependence on plasma shape and plasma fueling for small edge-localized mode regimes in TCV and ASDEX Upgrade. Nuclear Fusion, 2019, 59, 086020.	3.5	34
44	Overview of the JET preparation for deuterium–tritium operation with the ITER like-wall. Nuclear Fusion, 2019, 59, 112021.	3.5	87
45	A wall-aligned grid generator for non-linear simulations of MHD instabilities in tokamak plasmas. Computer Physics Communications, 2019, 243, 41-50.	7.5	10
46	Kinetic modeling of ELM-induced tungsten transport in a tokamak plasma. Physics of Plasmas, 2019, 26, .	1.9	12
47	Non-linear modeling of the threshold between ELM mitigation and ELM suppression by resonant magnetic perturbations in ASDEX upgrade. Physics of Plasmas, 2019, 26, 042503.	1.9	26
48	Numerical study of tearing mode seeding in tokamak X-point plasma. Physics of Plasmas, 2019, 26, .	1.9	4
49	A three-dimensional reduced MHD model consistent with full MHD. Physics of Plasmas, 2019, 26, .	1.9	12
50	Development and testing of an unstructured mesh method for whole plasma gyrokinetic simulations in realistic tokamak geometry. Physics of Plasmas, 2019, 26, 122503.	1.9	8
51	ELM-induced cold pulse propagation in ASDEX Upgrade. Plasma Physics and Controlled Fusion, 2019, 61, 045003.	2.1	6
52	Dynamics of ideal modes and subsequent ELM crashes in 3D tokamak geometry from external magnetic perturbations. Plasma Physics and Controlled Fusion, 2019, 61, 014019.	2.1	8
53	Effects of density gradients and fluctuations at the plasma edge on ECEI measurements at ASDEX Upgrade. Plasma Physics and Controlled Fusion, 2018, 60, 045002.	2.1	15
54	Insights into type-I edge localized modes and edge localized mode control from JOREK non-linear magneto-hydrodynamic simulations. Contributions To Plasma Physics, 2018, 58, 518-528.	1.1	16

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55	Test particles dynamics in the JOEUK 3D non-linear MHD code and application to electron transport in a disruption simulation. Nuclear Fusion, 2018, 58, 016043.	3.5	26
56	Nonlinear MHD simulations of QH-mode DIII-D plasmas and implications for ITER high- $Q$ scenarios. Plasma Physics and Controlled Fusion, 2018, 60, 014039.	2.1	16
57	Nonlinear coupling induced toroidal structure of edge localized modes. Nuclear Fusion, 2018, 58, 026011.	3.5	23
58	Simulation of the electromagnetic wall response during Vertical Displacement Events (VDE) in ITER tokamak. Journal of Physics: Conference Series, 2018, 1141, 012065.	0.4	2
59	Characterization of low-frequency inter-ELM modes of H-mode discharges at ASDEX Upgrade. Nuclear Fusion, 2018, 58, 112011.	3.5	13
60	Scaling of the toroidal structure and nonlinear dynamics of ELMs on ASDEX Upgrade. Plasma Physics and Controlled Fusion, 2018, 60, 125011.	2.1	4
61	Beam-Ion Acceleration during Edge Localized Modes in the ASDEX Upgrade Tokamak. Physical Review Letters, 2018, 121, 025002.	7.8	16
62	Non-linear magnetohydrodynamic simulations of edge localised mode triggering via vertical position oscillations in ITER. Nuclear Fusion, 2018, 58, 096018.	3.5	16
63	Electron acceleration in a JET disruption simulation. Nuclear Fusion, 2018, 58, 106022.	3.5	21
64	Progress in understanding disruptions triggered by massive gas injection via 3D non-linear MHD modelling with JOEUK. Plasma Physics and Controlled Fusion, 2017, 59, 014006.	2.1	47
65	Recent progress in the quantitative validation of JOEUK simulations of ELMs in JET. Nuclear Fusion, 2017, 57, 076006.	3.5	25
66	Overview of progress in European medium sized tokamaks towards an integrated plasma-edge/wall solution <sup>a</sup> . Nuclear Fusion, 2017, 57, 102014.	3.5	23
67	Overview of ASDEX Upgrade results. Nuclear Fusion, 2017, 57, 102015.	3.5	53
68	Disruption mitigation by injection of small quantities of noble gas in ASDEX Upgrade. Plasma Physics and Controlled Fusion, 2017, 59, 014046.	2.1	35
69	Magnetic flux pumping in 3D nonlinear magnetohydrodynamic simulations. Physics of Plasmas, 2017, 24, .	1.9	29
70	Non-linear MHD modelling of edge localized modes dynamics in KSTAR. Nuclear Fusion, 2017, 57, 116059.	3.5	16
71	Edge localized mode rotation and the nonlinear dynamics of filaments. Physics of Plasmas, 2016, 23, 042513.	1.9	22
72	Simulation of surface currents excited by plasma Wall-Touching Kink and vertical modes in tokamak. , 2016, , .		2

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73	Non-linear MHD simulations of ELMs in JET and quantitative comparisons to experiments. Plasma Physics and Controlled Fusion, 2016, 58, 014026.	2.1	20
74	Electromagnetic thin-wall model for simulations of plasma wall-touching kink and vertical modes. Journal of Plasma Physics, 2015, 81, .	2.1	7
75	Energy conservation and numerical stability for the reduced MHD models of the non-linear JOREK code. ESAIM: Mathematical Modelling and Numerical Analysis, 2015, 49, 1331-1365.	1.9	19
76	Three-dimensional non-linear magnetohydrodynamic modeling of massive gas injection triggered disruptions in JET. Physics of Plasmas, 2015, 22, .	1.9	45
77	Nonlinear MHD simulations of Quiescent H-mode plasmas in DIII-D. Nuclear Fusion, 2015, 55, 113002.	3.5	33
78	Resistive Reduced MHD Modeling of Multi-Edge-Localized-Mode Cycles in Tokamak X-Point Plasmas. Physical Review Letters, 2015, 114, 035001.	7.8	28
79	Non-linear MHD modeling of edge localized mode cycles and mitigation by resonant magnetic perturbations. Plasma Physics and Controlled Fusion, 2015, 57, 014020.	2.1	25
80	Mechanism of Edge Localized Mode Mitigation by Resonant Magnetic Perturbations. Physical Review Letters, 2014, 113, 115001.	7.8	60
81	Non-linear Simulations of MHD Instabilities in Tokamaks Including Eddy Current Effects and Perspectives for the Extension to Halo Currents. Journal of Physics: Conference Series, 2014, 561, 012011.	0.4	5
82	Fast-ion redistribution and loss due to edge perturbations in the ASDEX Upgrade, DIII-D and KSTAR tokamaks. Nuclear Fusion, 2013, 53, 123008.	3.5	47
83	Overview of ASDEX Upgrade results. Nuclear Fusion, 2013, 53, 104003.	3.5	36
84	Nonlinear excitation of low-n harmonics in reduced magnetohydrodynamic simulations of edge-localized modes. Physics of Plasmas, 2013, 20, .	1.9	48
85	Non-linear magnetohydrodynamic modeling of plasma response to resonant magnetic perturbations. Physics of Plasmas, 2013, 20, .	1.9	99
86	Power load studies in JET and ASDEX-Upgrade with full-W divertors. Plasma Physics and Controlled Fusion, 2013, 55, 124039.	2.1	51
87	Fast-ion losses induced by ELMs and externally applied magnetic perturbations in the ASDEX Upgrade tokamak. Plasma Physics and Controlled Fusion, 2013, 55, 124014.	2.1	65
88	Reduced-magnetohydrodynamic simulations of toroidally and poloidally localized edge localized modes. Physics of Plasmas, 2012, 19, .	1.9	30
89	Solitary magnetic perturbations at the ELM onset. Nuclear Fusion, 2012, 52, 114025.	3.5	17
90	Coupling JOREK and STARWALL Codes for Non-linear Resistive-wall Simulations. Journal of Physics: Conference Series, 2012, 401, 012010.	0.4	33

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91	Overview of ASDEX Upgrade results. Nuclear Fusion, 2011, 51, 094012.	3.5	27
92	Overview of ASDEX Upgrade results. Nuclear Fusion, 2009, 49, 104009.	3.5	11
93	Determination of the heat diffusion anisotropy by comparing measured and simulated electron temperature profiles across magnetic islands. Nuclear Fusion, 2009, 49, 115009.	3.5	16
94	Heat diffusion across magnetic islands and ergodized plasma regions in realistic tokamak geometry. Physics of Plasmas, 2008, 15, .	1.9	9
95	Numerical modeling of diffusive heat transport across magnetic islands and highly stochastic layers. Physics of Plasmas, 2007, 14, 052501.	1.9	22
96	Recent progress in modeling ICRF-edge plasma interactions with application to ASDEX Upgrade. Nuclear Fusion, 0, , .	3.5	11