Laurent Villard

List of Publications by Year
in descending order

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66 papers	2,202 citations	257450 24 h-index	223800 46 g-index
66 all docs	66 docs citations	66 times ranked	987 citing authors

#	Article	IF	Citations
1	Gyrokinetic simulations of turbulent transport. Nuclear Fusion, 2010, 50, 043002.	3.5	295
2	A global collisionless PIC code in magnetic coordinates. Computer Physics Communications, 2007, 177, 409-425.	7.5	185
3	System Size Effects on Gyrokinetic Turbulence. Physical Review Letters, 2010, 105, 155001.	7.8	102
4	Clarifications to the limitations of the s-Î± equilibrium model for gyrokinetic computations of turbulence. Physics of Plasmas, 2009, 16, .	1.9	101
5	Global full-fgyrokinetic simulations of plasma turbulence. Plasma Physics and Controlled Fusion, 2007, 49, B173-B182.	2.1	82
6	Long global gyrokinetic simulations: Source terms and particle noise control. Physics of Plasmas, 2008, 15, .	1.9	78
7	Gyrokinetic global three-dimensional simulations of linear ion-temperature-gradient modes in Wendelstein 7-X. Physics of Plasmas, 2004, 11, 3196-3202.	1.9	73
8	Orb5: A global electromagnetic gyrokinetic code using the PIC approach in toroidal geometry. Computer Physics Communications, 2020, 251, 107072.	7.5	66
9	Complete multi-field characterization of the geodesic acoustic mode in the TCV tokamak. Plasma Physics and Controlled Fusion, 2014, 56, 072001.	2.1	65
10	The effect of plasma triangularity on turbulent transport: modeling TCV experiments by linear and non-linear gyrokinetic simulations. Plasma Physics and Controlled Fusion, 2009, 51, 055016.	2.1	61
11	Full radius linear and nonlinear gyrokinetic simulations for tokamaks and stellarators: zonal flows, appliedEÃ—Bflows, trapped electrons and finite beta. Nuclear Fusion, 2004, 44, 172-180.	3.5	60
12	Predictions on heat transport and plasma rotation from global gyrokinetic simulations. Nuclear Fusion, 2011, 51, 103023.	3.5	56
13	Global linear gyrokinetic simulations in quasi-symmetric configurations. Physics of Plasmas, 2001, 8, 3321-3333.	1.9	54
14	Nonlinear low noise particle-in-cell simulations of electron temperature gradient driven turbulence. Physics of Plasmas, 2007, 14, 010701.	1.9	52
15	Flux- and gradient-driven global gyrokinetic simulation of tokamak turbulence. Physics of Plasmas, 2011, 18, .	1.9	50
16	Global-gyrokinetic study of finite Î² effects on linear microinstabilities. Physics of Plasmas, 2003, 10, 1424-1436.	1.9	47
17	On the definition of a kinetic equilibrium in global gyrokinetic simulations. Physics of Plasmas, 2006, 13, 052304.	1.9	47
18	Global simulations of tokamak microturbulence: finite-Î² effects and collisions. Plasma Physics and Controlled Fusion, 2011, 53, 124027.	2.1	47

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19	L-mode-edge negative triangularity tokamak reactor. Nuclear Fusion, 2019, 59, 056017.	3.5	45
20	Neoclassical equilibria as starting point for global gyrokinetic microturbulence simulations. Physics of Plasmas, 2010, 17, .	1.9	42
21	Nonlinear quasisteady state benchmark of global gyrokinetic codes. Physics of Plasmas, 2010, 17, .	1.9	37
22	The role of plasma elongation on the linear damping of zonal flows. Physics of Plasmas, 2008, 15, .	1.9	35
23	Investigating profile stiffness and critical gradients in shaped TCV discharges using local gyrokinetic simulations of turbulent transport. Plasma Physics and Controlled Fusion, 2015, 57, 054010.	2.1	35
24	Simulations of global electrostatic microinstabilities in ASDEX Upgrade discharges. Physics of Plasmas, 2004, 11, 198-206.	1.9	32
25	Pullback scheme implementation in ORB5. Computer Physics Communications, 2019, 238, 194-202.	7.5	25
26	Interaction of large scale flow structures with gyrokinetic turbulence. Physics of Plasmas, 2011, 18, .	1.9	23
27	Global gyrokinetic stability of collisionless microtearing modes in large aspect ratio tokamaks. Physics of Plasmas, 2014, 21, 082513.	1.9	23
28	An arbitrary wavelength solver for global gyrokinetic simulations. Application to the study of fine radial structures on microturbulence due to non-adiabatic passing electron dynamics. Physics of Plasmas, 2017, 24, .	1.9	23
29	Global gyrokinetic ion temperature gradient turbulence simulations of ITER. Plasma Physics and Controlled Fusion, 2013, 55, 074017.	2.1	22
30	Nonlocal effects in negative triangularity TCV plasmas. Plasma Physics and Controlled Fusion, 2021, 63, 044001.	2.1	21
31	Rapid Fourier space solution of linear partial integro-differential equations in toroidal magnetic confinement geometries. Computer Physics Communications, 2010, 181, 715-719.	7.5	20
32	A portable platform for accelerated PIC codes and its application to GPUs using OpenACC. Computer Physics Communications, 2016, 207, 69-82.	7.5	20
33	Gyrokinetic investigation of AlfvÃ©n instabilities in the presence of turbulence. Plasma Physics and Controlled Fusion, 2021, 63, 065009.	2.1	20
34	Nonlinear gyrokinetic PIC simulations in stellarators with the code EUTERPE. Journal of Plasma Physics, 2020, 86, .	2.1	18
35	Verification of Gyrokinetic codes: Theoretical background and applications. Physics of Plasmas, 2017, 24, .	1.9	17
36	Global gyrokinetic simulations of TEM microturbulence. Plasma Physics and Controlled Fusion, 2013, 55, 074016.	2.1	16

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37	A full radius gyrokinetic stability analysis for large aspect ratio finite-Î² tokamaks. Physics of Plasmas, 2004, 11, 3106-3130.	1.9	15
38	Synergy between ion temperature gradient turbulence and neoclassical processes in global gyrokinetic particle-in-cell simulations. Physics of Plasmas, 2012, 19, .	1.9	14
39	Investigating the radial structure of axisymmetric fluctuations in the TCV tokamak with local and global gyrokinetic GENE simulations. Plasma Physics and Controlled Fusion, 2018, 60, 034003.	2.1	14
40	Nonlinear dynamics of energetic-particle driven geodesic acoustic modes in ASDEX Upgrade. Physics of Plasmas, 2020, 27, 042512.	1.9	14
41	Quasisteady and steady states in global gyrokinetic particle-in-cell simulations. Physics of Plasmas, 2009, 16, 052307.	1.9	11
42	Short wavelength ion temperature gradient turbulence. Physics of Plasmas, 2012, 19, .	1.9	10
43	A comprehensive gyrokinetic description of global electrostatic microinstabilities in a tokamak. Physics of Plasmas, 2009, 16, 052507.	1.9	9
44	Short wavelength ion temperature gradient mode and coupling with trapped electrons. Physics of Plasmas, 2009, 16, .	1.9	9
45	Toroidal universal drift instability: A global gyrokinetic study. Physics of Plasmas, 2010, 17, 102105.	1.9	9
46	PadÃ© approximation of the adiabatic electron contribution to the gyrokinetic quasi-neutrality equation in the ORB5 code. Journal of Physics: Conference Series, 2016, 775, 012006.	0.4	9
47	Global turbulence features across marginality and non-local pedestal-core interactions. Plasma Physics and Controlled Fusion, 2019, 61, 034003.	2.1	9
48	Implementation of energy transfer technique in ORB5 to study collisionless wave-particle interactions in phase-space. Computer Physics Communications, 2021, 262, 107032.	7.5	9
49	Numerics and computation in gyrokinetic simulations of electromagnetic turbulence with global particle-in-cell codes. Plasma Physics and Controlled Fusion, 2021, 63, 084007.	2.1	8
50	Role of Trapped Electrons on Global Gyrokinetic Linear Stability of Collisionless Microtearing Modes. Journal of Physics: Conference Series, 2014, 561, 012017.	0.4	7
51	Towards the optimization of a gyrokinetic Particle-In-Cell (PIC) code on large-scale hybrid architectures. Journal of Physics: Conference Series, 2016, 775, 012010.	0.4	7
52	Gradient- and flux-driven global gyrokinetic simulations of ITG and TEM turbulence with an improved hybrid kinetic electron model. Journal of Physics: Conference Series, 2018, 1125, 012014.	0.4	6
53	Gyrokinetic simulations on many- and multi-core architectures with the global electromagnetic Particle-In-Cell Code ORB5. Computer Physics Communications, 2021, 262, 107208.	7.5	6
54	Moment approach of the multi-species non-linear Coulomb collision operator adapted to particle-in-cell codes. Plasma Physics and Controlled Fusion, 2021, 63, 025006.	2.1	6

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55	Turbulence and zonal flow structures in the core and L-mode pedestal of tokamak plasmas. Journal of Physics: Conference Series, 2014, 561, 012022.	0.4	5
56	Sluggish response of untrapped electrons and global electrostatic micro-instabilities in a tokamak. Journal of Physics: Conference Series, 2010, 208, 012058.	0.4	4
57	Quasilinear treatment of waveâ€“particle interactions in the electron cyclotron range and its implementation in a gyrokinetic code. Plasma Physics and Controlled Fusion, 2021, 63, 064001.	2.1	4
58	An optimisation of allreduce communication in message-passing systems. Parallel Computing, 2021, 107, 102812.	2.1	4
59	Negative Triangularity Tokamak as Fusion Energy System. , 0, , .		4
60	Accuracy of momentum and gyrodensity transport in global gyrokinetic particle-in-cell simulations. Physics of Plasmas, 2014, 21, 052501.	1.9	3
61	Finite Î² effects on short wavelength ion temperature gradient modes. Physics of Plasmas, 2020, 27, 052509.	1.9	3
62	Electron-cyclotron resonance heating and current drive source for flux-driven gyrokinetic simulations of tokamaks. Plasma Physics and Controlled Fusion, 2022, 64, 095008.	2.1	3
63	EUROfusion-theory and advanced simulation coordination (E-TASC): programme and the role of high performance computing. Plasma Physics and Controlled Fusion, 2022, 64, 034005.	2.1	2
64	First principles gyrokinetic analysis of electromagnetic plasma instabilities. Plasma Physics and Controlled Fusion, 2019, 61, 114002.	2.1	1
65	Simulations of microturbulence in magnetised plasmas using a delta-f gyrokinetic approach with an evolving background Maxwellian. Journal of Physics: Conference Series, 2021, 1785, 012003.	0.4	1
66	Linear and nonlinear excitation of TAE modes by external electromagnetic perturbations using ORB5. Plasma Physics and Controlled Fusion, 0, , .	2.1	1