

Curriculum Vitae **PD. Dr. Philipp Lauber**

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[research homepage https://pwl.home.ipp.mpg.de/](https://pwl.home.ipp.mpg.de/)



Present Position (2024):

- Group leader in Research Unit “MHD and Energetic Particles” (Prof. S. Günter) at Max-Planck-Institut für Plasmaphysik (IPP), Garching, Germany
- Privatdozent at Technical University München (TUM)

Research Interests:

Theoretical, numerical and experimental aspects of energetic ion and burning plasma physics in fusion plasmas

Academic degrees:

- 1994-2000: physics studies at Universität Bayreuth, diploma thesis at IPP Garching
- 2000-2003: PhD thesis at IPP Garching/Technical University Munich (TUM) (summa cum laude)
- December 2013: Habilitation at the Technical University of Munich (TUM)

Grants, prizes and competitive research funds

- 2004: Otto-Hahn-Medal of the Max-Planck Society; connected grant used for visits to PPPL Princeton, US and Institute for Fusion Studies (IFS), University of Texas in Austin (September 2005 - April 2006)
- July 2009: Hans-Werner-Osthoff plasma physics award
- Principal Investigator Eurofusion Enabling research project MET (2017-2019)
- Principal Investigator Eurofusion Enabling research project ATEP (2021-2024)
- ITER contract on development of EP-Stability Workflow (2019-2021)
- Main IPP contact person for Eurofusion Enabling research project NLED (2014-2016, PI F. Zonca)

- Main IPP contact person for Eurofusion Enabling research project NAT (2019-2021, PI F. Zonca)
- Co-leader ‘Energetic Particle Group’ and member of the steering committee of the Max-Planck-Princeton Center (MPPC, 2012-2020)

Main software projects:

- LIGKA code (Linear gyro-kinetic Alfvén physics solver) [Lauber, 2007]
- EP-Stability Workflow [A. Popa, Ph. Lauber, T Hayward-Schneider, 2023]
- ATEP code (Advanced transport model for energetic particle transport) [Ph. Lauber, G. Meng 2022-23]

Memberships and official functions

- ASDEX Upgrade Task force leader: MHD and Fast Particles (2019-2022)
- Since 2011: permanent program committee member at IAEA TCM EPPI group
- 2023-2024: Member of Magnetic Confinement Fusion program committee for the 50th Conference of Plasma Physics (EPS, 2024)
- 2011 - 2019: Member of the ITPA group on Energetic Particles
- 2012-2018 Program Committee member for the Eurofusion Theory conference (EFTC)
- Guest editor ‘Focus on Fast Particle Instabilities and Transport in Fusion, Space and Astrophysics Plasmas’, New Journal of Physics, IOP, 2016

Supervised Master and PhD theses:

Master:

- T. Hayward-Schneider
- V.A. Popa
- A. Döll
- R. Stucchi

PhD:

- M. Brüdgam
- D. Curran
- M. Schneller
- T. Hayward-Schneider
- Andrej Lier
- V.-A. Popa

Metrics: see google scholar

Publications and presentations, see also <https://pwl.home.ipp.mpg.de/>:

- [An IMAS-integrated workflow for energetic particle stability](#)
V.-A. Popa, P Lauber, T Hayward-Schneider, M Schneider, O Hoenen, ...
Nuclear Fusion 63 (12), 126008
- [Nonlinear interaction of Alfvénic instabilities and turbulence via the modification of the equilibrium profiles](#)
A Biancalani, A Bottino, D Del Sarto, MV Falessi, T Hayward-Schneider, P Lauber, A Mishchenko, B Rettino, JN Sama, F Vannini, L Villard, X Wang, F Zonca, ASDEX Upgrade Team
Journal of Plasma Physics 89 (6), 905890602 2023
- [Gyrokinetic modelling of non-linear interaction of Alfvén waves and EGAMs in ASDEX-Upgrade](#)
B Rettino, T Hayward-Schneider, A Biancalani, A Bottino, P Lauber, ... 2023
Nuclear Fusion 63 (12), 126051
- [Gyrokinetic simulations of neoclassical electron transport and bootstrap current generation in tokamak plasmas in the TRIMEG code](#)
L Rekhviashvili, Z Lu, M Hoelzl, A Bergmann, P Lauber
Physics of Plasmas 30 (7) 2023
- [Nonlinear dynamics of nonadiabatic chirping-frequency Alfvén modes in tokamak plasmas](#)
X Wang, S Briguglio, A Bottino, M Falessi, T Hayward-Schneider, ... 1 2023
Plasma Physics and Controlled Fusion 65 (7), 074001
- [Numerical tools for burning plasmas](#)
A Mishchenko, A Biancalani, M Borchardt, A Bottino, S Briguglio, ... 2 2023
Plasma Physics and Controlled Fusion 65 (6), 064001
- [The impact of fusion-born alpha particles on runaway electron dynamics in ITER disruptions](#)
A Lier, G Papp, Ph Lauber, I Pusztai, K Särkimäki, O Embreus 2023
Nuclear Fusion 63 (5), 056018
- [Excitation of toroidal Alfvén eigenmodes with counter-current NBI in the TCV tokamak](#)
M Vallar, M Dreval, M Garcia-Munoz, S Sharapov, J Poley, AN Karpushov, ... 2023
Nuclear Fusion 63 (4), 046003
- [Full f and gyrokinetic particle simulations of Alfvén waves and energetic particle physics](#)
Z Lu, G Meng, R Hatzky, M Hoelzl, P Lauber 4 2023
Plasma Physics and Controlled Fusion 65 (3), 034004
- [Effect of temperature anisotropy on the dynamics of geodesic acoustic modes](#)
JN Sama, A Biancalani, A Bottino, I Chavdarovski, D Del Sarto, A Ghizzo, T Hayward-Schneider, Ph Lauber, B Rettino, F Vannini 2023
Journal of Plasma Physics 89 (1), 905890109
- [A neoclassical solver for the transport equations of phase space zonal structures of energetic particles](#)
G Meng, P Lauber, Z Lu, A Bergmann, ATEP Team 2023
29th IAEA Fusion Energy Conference (FEC 2023)
- [First Principle Gyrokinetic Simulations of Frequency Chirping Alfvén Modes in Fusion Plasmas](#)
X Wang, A Bottino, T Hayward-Schneider, P Lauber, A Mishchenko, ... 2023
29th IAEA Fusion Energy Conference (FEC 2023)
- [Towards burning plasmas: theory and simulations](#)
A Mishchenko, A Biancalani, A Bottino, S Briguglio, R Dumont, J Ferreira, ... 2023
29th IAEA Fusion Energy Conference (FEC 2023)
- [Non-linear benchmark between HYMAGYC, MEGA, ORB5 and XTOR-K codes using the NLED-AUG test case to study Alfvénic modes driven by energetic particles](#)
G Vlad, X Wang, F Vannini, H Lütjens, S Briguglio, N Carlevaro, M Falessi, ... 2023

- 29th IAEA Fusion Energy Conference (FEC 2023)
- [Global gyrokinetic simulations of Alfvén eigenmodes in ITER and ASDEX Upgrade and the effect of energetic particle distribution functions on stability](#) 2023
T Hayward-Schneider, P Lauber, A Bottino, A Mishchenko, B Rettino, ...
29th IAEA Fusion Energy Conference (FEC 2023)
- [Effect of zonal structures excited by Alfvén modes, on turbulence](#) 2023
A Biancalani, A Bottino, D Del Sarto, MV Falessi, T Hayward-Schneider, ...
29th IAEA Fusion Energy Conference (FEC 2023)
- [Nonlinear Excitation of Energetic Particle Driven Geodesic Acoustic Mode by Alfvén Eigenmode in ASDEX-Upgrade](#) 2023
H Wang, P Lauber, Y Todo, Y Suzuki, H Li, M Idouakass, J Wang, ...
29th IAEA Fusion Energy Conference (FEC 2023)
- [A solver for energetic particle transport in constants of motion space with collision and phase space zonal structures in tokamak plasmas](#) 2023
G Meng, P Lauber, Z Lu, A Bergmann, M Schneider, ATEP Team
20th European Fusion Theory Conference (EFTC 2023)
- [Advanced energetic particle transport models](#) 2023
MV Falessi, P Lauber, L Chen, Z Qiu, F Zonca, ATEP Team
27th Joint EU-US Transport Task Force Meeting (TTF 2023)
- [Ion temperature gradient mode mitigation by energetic particles, mediated by forced-driven zonal flows](#) 2023
JN Sama, A Biancalani, A Bottino, D Del Sarto, G Di Giannatale, A Ghizzo, ...
27th Joint EU-US Transport Task Force Meeting (TTF 2023)
- [Advanced transport models for energetic particles](#) 2023
P Lauber, M Falessi, A Biancalani, A Bottino, S Briguglio, N Carlevaro, ...
20th European Fusion Theory Conference (EFTC 2023, invited)
- [Energetic particles transport in constants of motion space due to collision in tokamak plasmas](#) 2023
G Meng, P Lauber, Z Lu, A Bergmann
14th International West Lake Symposium–Frontier Progress in Fusion Energy ...
- [Full-f and delta-f gyrokinetic particle simulations of Alfvén waves and energetic particle physics in tokamak plasmas](#) 2023
Z Lu, G Meng, R Hatzky, P Lauber, M Hoelzl
14th International West Lake Symposium–Frontier Progress in Fusion Energy ...
- [Physics of drift Alfvén instabilities and energetic particles in fusion plasmas](#) 2023
Y Li, MV Falessi, P Lauber, Y Li, Z Qiu, G Wei, F Zonca
Plasma Physics and Controlled Fusion
- [Time evolution and finite element representation of Phase Space Zonal Structures in ORB5](#) 2022
A Bottino, MV Falessi, T Hayward-Schneider, A Biancalani, S Briguglio, ...
Journal of Physics: Conference Series 2397 (1), 012019
- [Gyrokinetic modelling of the Alfvén mode and EGAM activity in ASDEX Upgrade](#) 2022
F Vannini, A Biancalani, A Bottino, T Hayward-Schneider, P Lauber, ...
Journal of Physics: Conference Series 2397 (1), 012003
- [Energetic particle transport: diffusion vs convection and phase-space barriers](#) 2022
N Carlevaro, G Montani, MV Falessi, P Lauber
arXiv preprint arXiv:2211.08836
- [Gyrokinetic modelling of the Alfvén mode activity in ASDEX Upgrade with an isotropic slowing-down fast-particle distribution](#) 2022
F Vannini, A Biancalani, A Bottino, T Hayward-Schneider, P Lauber, ...
Nuclear Fusion 62 (12), 126042
- [Multi-scale analysis of global electromagnetic instabilities in ITER pre-fusion-power operation plasmas](#) 2022
T Hayward-Schneider, P Lauber, A Bottino, A Mishchenko

Nuclear Fusion 62 (11), 112007

[Representation and modeling of charged particle distributions in tokamaks](#)

A Bierwage, M Fitzgerald, P Lauber, M Salewski, Y Kazakov, Ž Štancar [6](#) 2022
Computer Physics Communications 275, 108305

[Gyrokinetic modeling of anisotropic energetic particle driven instabilities in tokamak plasmas](#)

B Rettino, T Hayward-Schneider, A Biancalani, A Bottino, P Lauber, ... [13](#) 2022
Nuclear Fusion 62 (7), 076027

[Plasma physics and control studies planned in JT-60SA for ITER and DEMO operations and risk mitigation](#)

M Yoshida, G Giruzzi, N Aiba, JF Artaud, J Ayllon-Guerola, L Balbinot, ... [4](#) 2022
Plasma Physics and Controlled Fusion 64 (5), 054004

[One dimensional reduced model for ITER relevant energetic particle transport](#)

N Carlevaro, G Meng, G Montani, F Zonca, T Hayward-Schneider, ... [3](#) 2022
Plasma Physics and Controlled Fusion 64 (3), 035010

[Mode structure symmetry breaking of reversed shear Alfvén eigenmodes and its impact on the generation of parallel velocity asymmetries in energetic particle distribution](#)

Meng Guo, P Lauber, W Xin, LU Zhixin [1](#) 2022
Plasma Science and Technology 24 (2), 025101

[Multi-scale analysis of global electromagnetic instabilities in ITER pre-fusion-power operation plasmas](#)

T Hayward-Schneider, P Lauber, A Bottino, A Mishchenko [5](#) 2022
Nuclear Fusion 2022 Nucl. Fusion 62 11200

[Energy-selective confinement of fusion-born alpha particles during internal relaxations in a tokamak plasma](#)

A Bierwage, P Lauber, et al [11](#) 2022
Nature Communications **13**, Article number: 3941 (2022)

[A linear benchmark between HYMAGYC, MEGA and ORB5 codes using the NLED-AUG test case to study Alfvénic modes driven by energetic particles](#)

G Vlad, X Wang, F Vannini, S Briguglio, N Carlevaro, MV Falessi, ... [17](#) 2021
Nuclear Fusion 61 (11), 116026

[Isotope dependence of beta-induced Alfvén eigenmode \(BAE\) and low frequency mode \(LFM\) stability in DIII-D](#)

WW Heidbrink, GJ Choi, MA Van Zeeland, ME Austin, GH Degrandchamp, ... [6](#) 2021
Nuclear Fusion 61 (10), 106021

[The development of an implicit full f method for electromagnetic particle simulations of Alfvén waves and energetic particle physics](#)

ZX Lu, G Meng, M Hoelzl, P Lauber [18](#) 2021
Journal of Computational Physics 440, 110384

[Effects of anisotropic energetic particles on zonal flow residual level](#)

ZX Lu, M Weiland, P Lauber, X Wang, G Meng, F Zonca [6](#) 2021
Nuclear Fusion 61 (8), 086022

[Gyrokinetic investigation of the nonlinear interaction of Alfvén instabilities and energetic particle-driven geodesic acoustic modes](#)

F Vannini, A Biancalani, A Bottino, T Hayward-Schneider, P Lauber, ... [15](#) 2021
Physics of Plasmas 28 (7)

[Numerics and computation in gyrokinetic simulations of electromagnetic turbulence with global particle-in-cell codes](#)

A Mishchenko, A Biancalani, A Bottino, T Hayward-Schneider, P Lauber, ... [10](#) 2021
Plasma Physics and Controlled Fusion 63 (8), 084007

[Alpha particle driven Alfvénic instabilities in ITER post-disruption plasmas](#)

A Lier, G Papp, PW Lauber, O Embreus, GJ Wilkie, S Braun [5](#) 2021
Nuclear Fusion 61 (8), 086003

[Energetic particle dynamics induced by off-axis neutral beam injection on ASDEX-upgrade, JT-60SA and](#)

[3](#) 2021

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P Lauber, G Meng, Z Lu, A Popa, T Hayward-Schneider, ENR Eurofusion, ...
The 28th IAEA Fusion Energy Conf.

[Implementation of energy transfer technique in ORB5 to study collisionless wave-particle interactions in phase-space](#)

I Novikau, A Biancalani, A Bottino, A Di Siena, P Lauber, E Poli, E Lanti, ...
Computer Physics Communications 262, 107032

[15](#) 2021

[Gyrokinetic investigation of Alfvén instabilities in the presence of turbulence](#)

A Biancalani, A Bottino, A Di Siena, Ö Gürçan, T Hayward-Schneider, ...
Plasma Physics and Controlled Fusion 63 (6), 065009

[22](#) 2021

[Global linear and nonlinear gyrokinetic modelling of Alfvén eigenmodes in ITER](#)

T Hayward-Schneider, P Lauber, A Bottino, ZX Lu
Nucl. Fusion 61 036045

[13](#) 2021

[High-energy fast ions drive BAEs unstable but not BAAEs](#)

WW Heidbrink, MA Van Zeeland, M Austin, A Bierwage, X Du, P Lauber, ...
2021 IAEA Fusion Energy Conference, paper IAEA-CN-286/748

[1](#) 2021

[‘BAAE’ instabilities observed without fast ion drive](#)

WW Heidbrink, MA Van Zeeland, ME Austin, A Bierwage, L Chen, ...
Nuclear Fusion 61 (1), 016029

[37](#) 2020

[On the polarization of shear Alfvén and acoustic continuous spectra in toroidal plasmas](#)

MV Falessi, N Carlevaro, V Fusco, E Giovannozzi, P Lauber, G Vlad, ...
Journal of Plasma Physics 86 (5), 845860501

[15](#) 2020

[Observation of Alfvén eigenmodes driven by off-axis neutral beam injection in the TCV tokamak](#)

B Geiger, AN Karpushov, P Lauber, S Sharapov, M Dreval, F Bagnato, ...
Plasma Physics and Controlled Fusion 62 (9), 095017

[12](#) 2020

[Effect of the electron redistribution on the nonlinear saturation of Alfvén eigenmodes and the excitation of zonal flows](#)

A Biancalani, A Bottino, P Lauber, A Mishchenko, F Vannini
Journal of Plasma Physics 86 (3), 825860301

[11](#) 2020

[Effects of the non-perturbative mode structure on energetic particle transport](#)

G Meng, P Lauber, Z Lu, X Wang
Nuclear Fusion 60 (5), 056017

[8](#) 2020

[Nonlinear dynamics of energetic-particle driven geodesic acoustic modes in ASDEX Upgrade](#)

I Novikau, A Biancalani, A Bottino, P Lauber, E Poli, P Manz, GD Conway, ...
Physics of Plasmas 27 (4)

[19](#) 2020

[Gyrokinetic investigation of the damping channels of Alfvén modes in ASDEX Upgrade](#)

F Vannini, A Biancalani, A Bottino, T Hayward-Schneider, P Lauber, ...
Physics of Plasmas 27 (4)

[24](#) 2020

[Isotope effects on the energetic particle dynamics induced by off-axis neutral beam injection on ASDEX Upgrade](#)

P Lauber, G Papp, B Geiger, B Vanovac, V Igochine, M Maraschek, ...
CNPS Workshop on Multi-scale Energetic Particle Transport in Fusion Devices ...

2020

[Development and testing of an unstructured mesh method for whole plasma gyrokinetic simulations in realistic tokamak geometry](#)

ZX Lu, P Lauber, T Hayward-Schneider, A Bottino, M Hoelzl
Physics of Plasmas 26 (12)

[17](#) 2019

[Advances in the physics studies for the JT-60SA tokamak exploitation and research plan](#)

G Giruzzi, M Yoshida, N Aiba, JF Artaud, J Ayllon-Guerola, O Beeke, ...
Plasma Physics and Controlled Fusion 62 (1), 014009

[26](#) 2019

[Active control of Alfvén eigenmodes in magnetically confined toroidal plasmas](#)

[51](#) 2019

- M Garcia-Munoz, SE Sharapov, MA Van Zeeland, E Ascasibar, A Cappa, ...
 Plasma Physics and Controlled Fusion 61 (5), 054007
- [Theoretical studies and simulations of mode structure symmetry breaking in tokamak plasmas in the presence of energetic particles](#) 14 2019
 ZX Lu, X Wang, P Lauber, E Fable, A Bottino, W Hornsby, ...
 Plasma Physics and Controlled Fusion 61 (4), 044005
- [Shear Alfvén wave continuum spectrum with bifurcated helical core equilibria](#) 2019
 A Rakha, Ph. Lauber, MJ Mantsinen, DA Spong
 Nucl. Fusion **59** 106042
- [Benchmark of gyrokinetic, kinetic MHD and gyrofluid codes for the linear calculation of fast particle driven TAE dynamics](#) 61 2018
 A Könies, S Briguglio, N Gorelenkov, T Fehér, M Isaev, P Lauber, ...
 Nuclear Fusion 58 (12), 126027
- [Strongly non-linear energetic particle dynamics in ASDEX Upgrade scenarios with core impurity accumulation](#) 17 2018
 Ph Lauber, B Geiger, G Papp, L Guimaraes, PZ Poloskei, V Igochine, ...
 proceedings of the 27th IAEA Fusion energy
- [Effect of elongation on energetic particle-induced geodesic acoustic mode](#) 21 2018
 A Di Siena, A Biancalani, T Görler, H Doerk, I Novikau, P Lauber, ...
 Nuclear Fusion 58 (10), 106014
- [Kinetic effects of thermal ions and energetic particles on discrete kinetic BAE mode generation and symmetry breaking](#) 16 2018
 ZX Lu, X Wang, P Lauber, F Zonca
 Nuclear Fusion 58 (8), 082021
- [Mode structure symmetry breaking of energetic particle driven beta-induced Alfvén eigenmode](#) 7 2018
 ZX Lu, X Wang, P Lauber, F Zonca
 Physics of Plasmas 25 (1)
- [Analytical finite-Lamor-radius and finite-orbit-width model for the LIGKA code and its application to KGAM and shear Alfvén physics](#) 13 2018
 Ph. Lauber and Z. Lu 2018 *J. Phys.: Conf. Ser.* **1125** 012015
- [The effects of electron cyclotron heating and current drive on toroidal Alfvén eigenmodes in tokamak plasmas](#) 31 2017
 SE Sharapov, M Garcia-Munoz, MA Van Zeeland, B Bobkov, IGJ Classen, ...
 Plasma Physics and Controlled Fusion 60 (1), 014026
- [Gyrokinetic analysis of low-n shear Alfvén and ion sound wave spectra in a high-beta tokamak plasma](#) 25 2017
 A Bierwage, P Lauber
 Nuclear Fusion 57 (11), 116063
- [MHD limits and plasma response in high-beta hybrid operations in ASDEX Upgrade](#) 17 2017
 V Igochine, P Piovesan, IGJ Classen, M Dunne, A Gude, P Lauber, Y Liu, ...
 Nuclear Fusion 57 (11), 116027
- [Physics and operation oriented activities in preparation of the JT-60SA tokamak exploitation](#) 27 2017
 G Giruzzi, M Yoshida, JF Artaud, Ö Asztalos, E Barbatto, P Bettini, ...
 Nuclear Fusion 57 (8), 085001
- [Turbulence characteristics of the I-mode confinement regime in ASDEX Upgrade](#) 18 2017
 P Manz, T Happel, F Ryter, M Bernert, G Birkenmeier, GD Conway, ...
 Nuclear Fusion 57 (8), 086022
- [Symmetry breaking of ion temperature gradient mode structure: From local to global analysis](#) 20 2017
 ZX Lu, E Fable, WA Hornsby, C Angioni, A Bottino, P Lauber, F Zonca
 Physics of Plasmas 24 (4)
- [Nonlinear interplay of Alfvén instabilities and energetic particles in tokamaks](#) 17 2017
 A Biancalani, A Bottino, M Cole, C Di Troia, P Lauber, A Mishchenko, ...
 Plasma Physics and Controlled Fusion 59 (5), 054004

- [Electron cyclotron heating can drastically alter reversed shear Alfvén eigenmode activity in DIII-D through finite pressure effects](#) 55 2016
MA Van Zeeland, WW Heidbrink, SE Sharapov, D Spong, A Cappa, ...
Nuclear Fusion 56 (11), 112007
- [Electron cyclotron heating modification of Alfvén eigenmode activity in DIII-D](#) 1 2016
MA Van Zeeland, WW Heidbrink, SE Sharapov, D Spong, A Cappa, ...
Preprint: 2016 IAEA Fusion Energy Conf., EX/P3-24
- [Linear gyrokinetic particle-in-cell simulations of Alfvén instabilities in tokamaks](#) 32 2016
A Biancalani, A Bottino, S Briguglio, A Könies, P Lauber, A Mishchenko, ...
Physics of Plasmas 23 (1)
- [Structure of wave-particle resonances and Alfvén mode saturation](#) 27 2016
X Wang, S Briguglio, P Lauber, V Fusco, F Zonca
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- [Experimental investigation of the radial structure of energetic particle driven modes](#) 33 2016
L Horváth, G Papp, Ph Lauber
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- [Geodesic oscillations and the weakly coherent mode in the I-mode of ASDEX Upgrade](#) 70 2015
P Manz, Ph Lauber, VE Nikolaeva, T Happel, F Ryter, G Birkenmeier, ...
Nuclear Fusion 55 (8), 083004
- [Off-axis NBI-driven energetic particle modes at ASDEX Upgrade](#) 2015
Ph Lauber, B Geiger, M Maraschek, L Horvath, C Di Troia, G Papp, ...
14th IAEA Technical Meeting on Energetic Particles in Magnetic Confinement ...
- [Local and global kinetic stability analysis of Alfvén eigenmodes in the 15 MA ITER scenario](#) 31 2015
Ph Lauber 2015 *Plasma Phys. Control. Fusion* 57 054011
- [Energetic ions in ITER plasmas](#) 123 2015
SD Pinches, P Lauber, et al
Physics of Plasmas 1 February 2015; 22 (2): 021807.
- [Nonlinear energetic particle transport in the presence of multiple Alfvénic waves in ITER](#) 49 2015
M Schneller, Ph Lauber, S Briguglio
Plasma Phys. Control. Fusion 58 014019
- [Off-axis NBI heated discharges at ASDEX Upgrade: EGAMs, RSAEs, TAE bursts](#) 6 2014
Ph Lauber
13th Energetic Particle Physics TG Meeting
- [Numerical validation of the electromagnetic gyrokinetic code NEMORB on global axisymmetric modes](#) 41 2014
A Biancalani, A Bottino, P Lauber, D Zarzoso
Nuclear Fusion 54 (10), 104004
- [Analytic dispersion relation of energetic particle driven geodesic acoustic modes and simulations with NEMORB](#) 47 2014
D Zarzoso, A Biancalani, A Bottino, P Lauber, E Poli, JB Girardo, X Garbet, ...
Nuclear Fusion 54 (10), 103006
- [Kinetic models for energetic particle physics in tokamaks—verification, validation and predictions for ITER](#) 2014
P Lauber, Invited talk
Joint Varenna-Lausanne International Workshop on Theory of Fusion Plasmas
- [Super-thermal particles in hot plasmas—kinetic models, numerical solution strategies, and comparison to tokamak experiments](#) 102 2013
Ph Lauber
Physics Reports 533 (2), 33-68
- [Multi-mode Alfvénic fast particle transport and losses: numerical versus experimental observation](#) 20 2013
M Schneller, P Lauber, R Bilato, M García-Muñoz, M Brüdgam et al Nuclear Fusion 53 (12), 123003
- [Energetic particle instabilities in fusion plasmas](#) 97 2013

SE Sharapov, B Alper, HL Berk, DN Borba, BN Breizman, CD Challis, ...
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[Off-axis nbi-driven modes at asdex upgrade](#)

P Lauber, M Schneller, A Biancalani, D Zarzoso, S Guenter, I Classen, ... [2](#) 2013
13th IAEA Technical Meeting on Energetic Particles in Magnetic Confinement ...

[Off-axis NBI driven Alfvénic modes at ASDEX Upgrade](#)

P Lauber, D Curran, M Schneller, D Zarzoso, I Classen, B Geiger, ... [2](#) 2013
13th IAEA Technical Meeting on Energetic Particles in Magnetic Confinement ...

[Transport of super-thermal particles and their effect on the stability of global modes in fusion plasmas](#)

M. Schneller [6](#) 2013
Technische Universität München, PhD thesis

[Super-thermal Particles in Hot Tokamak Plasmas](#)

PM Lauber, Habilitation thesis 2013
Technische Universität München <https://mediatum.ub.tum.de/1205991>

[Nonlinear alfvénic fast particle transport and losses](#)

M Schneller, P Lauber, M Garcia-Muñoz, M Brüdgam, S Günter [4](#) 2012
Journal of Physics: Conference Series 401 (1), 012022

[Alfvén eigenmodes and neoclassical tearing modes for orbit-following implementations](#)

E Hirvijoki, A Snicker, T Korpilo, P Lauber, E Poli, M Schneller, ... [21](#) 2012
Computer Physics Communications 183 (12), 2589-2593

[Benchmark of gyrokinetic, kinetic MHD and gyrofluid codes for the linear calculation of fast particle driven TAE dynamics](#) [25](#) 2012

A Könies, T Feher, P Lauber, A Mishchenko, R Kleiber, M Borchardt, ...

[Characterization of Alfvén eigenmodes using NBI during current ramp-up in the ASDEX Upgrade tokamak](#)

S Da Graça, GD Conway, P Lauber, D Curran, V Igochine, I Classen, ... [12](#) 2012
Plasma Physics and Controlled Fusion 54 (9), 095014

[Equilibrium and macroscopic stability of tokamaks](#)

K Lackner, S Guenter, P Lauber, G Pautasso, BD Scott [7](#) 2012
Fusion Physics

[Double-resonant fast particle-wave interaction](#)

M Schneller, P Lauber [24](#) 2012
Nuclear Fusion **52** 103019

[Low-frequency Alfvén eigenmodes during the sawtooth cycle at ASDEX Upgrade](#)

D Curran, P Lauber [25](#) 2012
Plasma Physics and Controlled Fusion **54** 055001 2012

[NBI-driven Alfvénic modes at ASDEX Upgrade](#)

P Lauber et al [30](#) 2012
Nuclear Fusion **52** 094007

[Fast-ion transport induced by Alfvén eigenmodes in the ASDEX Upgrade tokamak](#)

M Garcia-Munoz, IGJ Classen, B Geiger, WW Heidbrink, MA Van Zeeland, ... [68](#) 2011
Nuclear Fusion 51 (10), 103013

[Identification of geodesic chirping Alfvén modes and q-factor estimation in hot core tokamak plasmas in ASDEX Upgrade](#)

AG Elfimov, RMO Galvao, M Garcia-Munoz, V Igochine, P Lauber, ... [7](#) 2011
Plasma Physics and Controlled Fusion 53 (2), 025006

[Investigation of fast particle driven instabilities by 2D electron cyclotron emission imaging on ASDEX Upgrade](#) [30](#) 2011

I Classen, P Lauber, et al Plasma Physics and Controlled Fusion

[Comparison of Central Fast Ion Distributions between Plasmas with on-Axis and off-Axis NBI Current Drive on ASDEX Upgrade](#) 2010

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