

PUBLICATIONS

I include here the full list for the last 8 years, and the 25 most representative publications for the years before

Peer reviewed publications over the last 7 years

- 1) Bovet A, **Fasoli A**, Ricci P, Furno I and Gustafson K, Nondiffusive transport regimes for suprathermal ions in turbulent plasmas *Physical Review E* **91** 041101 (2015)
- 2) Medvedev S Y, Kikuchi M, Villard L, Takizuka T, Diamond D, Zushi H, Nagasaki K, Duan X, Wu Y, Ivanov A A, Martynov A A, Poshekhonov Y Y, **Fasoli A** and Sauter O, The negative triangularity tokamak: stability limits and prospects as a fusion energy system *Nuclear Fusion* **55** 063013 (2015)
- 3) Nespoli F, Labit B, Furno I, Canal G P, **Fasoli A** and Team TCV, Heat loads in inboard limited L-mode plasmas in TCV *Journal of Nuclear Materials* **463** 393-6 (2015)
- 4) **Fasoli A** and Team TCV, TCV heating and in-vessel upgrades for addressing DEMO physics issues *Nuclear Fusion* **55** 043006 (2015)
- 5) **Fasoli A**, *Nuclear Fusion* **55** 010201 (2015)
- 6) Furno I, Avino F, Bovet A, Diallo A, **Fasoli A**, Gustafson K, Iraj D, Labit B, Loizu J, Müller S H, Plyushchev G, Podestà M, Poli F M, Ricci P and Theiler C, Plasma turbulence, suprathermal ion dynamics and code validation on the basic plasma physics device TORPEX *Journal of Plasma Physics* **81** 345810310 (2015)
- 7) Ricci P, Riva F, Theiler C, **Fasoli A**, Furno I, Halpern F D and Loizu J, Approaching the investigation of plasma turbulence through a rigorous verification and validation procedure: A practical example *Physics of Plasmas* **22** 055704 (2015)
- 8) Spolaore M, N. Vianello, I. Furno, D. Carralero, M. Agostini, J. A. Alonso, F. Avino, R. Cavazzana, G. De Masi, **A. Fasoli**, C. Hidalgo, E. Martines, B. Momo, A. Scaggion, P. Scarin, S. Spagnolo, G. Spizzo, C. Theiler, and M. Zuin, Electromagnetic turbulent structures: A ubiquitous feature of the edge region of toroidal plasma configurations *Physics of Plasmas* **22** (2015)
- 9) R. Wenninger, F. Arbeiter, J. Aubert, L. Aho-Mantila, R. Albanese, R. Ambrosino, C. Angioni, J.-F. Artaud, M. Bernert, E. Fable, **A. Fasoli**, G. Federici, J. Garcia, G. Giruzzi, F. Jenko, P. Maget, M. Mattei, F. Maviglia, E. Poli, G. Ramogida, C. Reux, M. Schneider, B. Sieglin, F. Villone, M. Wischmeier and H. Zohm, Advances in the physics basis for the European DEMO design *Nuclear Fusion* **55** 063003 (2015)
- 10) Romanelli F , on behalf of the JET Contributors, **Fasoli A** , Overview of the JET results, *Nucl. Fusion* **55** 104001 (2015)
- 11) G. Zimbardo, E. Amato, A. Bovet, F. Effenberger, **A. Fasoli**, H. Fichtner, I. Furno, K. Gustafson, P. Ricci and S. Perri, Superdiffusive transport in laboratory and astrophysical plasmas, *Journal of Plasma Physics* **81**, 495810601 (2015)
- 12) Alexander N. Karpushov, Stefano Alberti, René Chavan, Vladimir I. Davydenko, Basil P. Duval, Alexander A. Ivanov, Damien Fasel, **Ambrogio Fasoli**, Aleksander I. Gorbovsky, Timothy Goodman, Vyacheslav V. Kolmogorov, Yves Martin, Olivier Sauter, Aleksey V. Sorokin, Matthieu Toussaint, Upgrade of the TCV tokamak, first phase: Neutral beam heating system, *Fusion Engineering and Design* **96**, 493 (2015)

- 13) **Fasoli A.**, Brunner S., Cooper W.A., Graves J.P., Ricci P., Sauter O. and Villard L., Computational challenges in magnetic-confinement fusion plasma physics, *Nature Physics* **12**, 411 (2016)
- 14) Testa, D ; Carfantan, H ; Albergante, M ; Blanchard, P ; Bourguignon, S ; **Fasoli, A** ; Goodyear, A ; Klein, A ; Lister, J B ; Panis, T, Sparse representation of signals: from astrophysics to real-time data analysis for fusion plasmas and system optimization analysis for ITER and TCV, *Plasma Phys. Control. Fusion* **58** 123001 (2016)
- 15) P. Puglia, W. Pires de Sa, P. Blanchard, S. Dorling, S. Dowson, **A. Fasoli**, J. Figueiredo, R. Galvão, M. Graham, G. Jones, C. Perez von Thun, M. Porkolab, L. Ruchko, D. Testa, P. Woskov, M.A. Albarracin-Manrique and JET Contributors, The upgraded JET toroidal Alfvén eigenmode diagnostic system, *Nucl. Fusion* **56** 112020 (2016)
- 16) **Fasoli A** , *Nucl. Fusion* **56** 010201 (2016)
- 17) Baquero-Ruiz M, Avino F, Chellai O, **Fasoli A** , Furno I, Jacquier R, Dual Langmuir-probe array for 3D plasma studies in TORPEX, *Review of Scientific Instruments* **87**, 113504 (2016)
- 18) Avino F, **Fasoli A** , Furno I, Ricci P, Theiler, X-point effect on plasma blob dynamics, *Physical Review Letters* **116** 105001 (2016)
- 19) Pfefferle, D ; Cooper, W A ; **Fasoli, A** ; Graves, J P, Effects of magnetic ripple on 3D equilibrium and alpha particle confinement in the European DEMO, *Nucl. Fusion* **56** 112002 (2016)
- 20) Holzer, Adrian ; Vonèche Cardia, Isabelle ; Bendahan, Samuel ; Berne, Alexis ; Bragazza, Luca ; Danalet, Antonin ; **Fasoli, Ambrogio** ; Feige, Jérôme ; Gillet, Denis ; Isaac, Siara ; Le Duc, Ingrid ; Preissmann, Delphine ; Tormey, Roland, Increasing the Perspectives of Engineering Undergraduates on Societal Issues through an Interdisciplinary Program, *International Journal Of Engineering Education* **32**, 614 (2016)
- 21) Furno I, Bovet A, **Fasoli A** , Non-diffusive transport of suprathermal ions by intermittent turbulent structures, *Plasma Phys. Control. Fusion* **58**, 114023 (2016)
- 22) **Fasoli A** , *Nucl. Fusion* **57** 010202 (2017)
- 23) Litaudon X for the JET Team, **Fasoli A** , Overview of the JET results in support to ITER, *Nucl. Fusion* **57**, 102001 (2017)
- 24) Coda S for the TCV Team, **Fasoli A** , Overview of the TCV tokamak program: scientific progress and facility upgrades, *Nucl. Fusion* **57**, 102011 (2017)
- 25) Alexander N. Karpushov, René Chavan, Stefano Coda, Vladimir I. Davydenko, Frédéric Dolizy, Aleksandr N. Dranitschnikov, Basil P. Duval, Alexander A. Ivanov, Damien Fasel, **Ambrogio Fasoli**, Vyacheslav V. Kolmogorov, Pierre Lavanchy, Xavier Llobet, Blaise Marlétaz, Philippe Marmillod, Yves Martin, Antoine Merle, Albert Perez, Matthieu Toussaint, Neutral beam heating on the TCV tokamak, *Fusion Engineering and Design* **123**, 468 (2017)
- 26) R. Wenninger, R. Albanese, R. Ambrosino, F. Arbeiter, J. Aubert, C. Bachmann, L. Barbato, T. Barrett, M. Beckers, W. Biel, L. Boccaccini, D. Carralero, D. Coster, T. Eich, **A. Fasoli**, G. Federici, M. Firdaouss, J. Graves, J. Horacek, M. Kovari, S. Lanthaler, V. Loschiavo, C. Lowry, H. Lux, G. Maddaluno, F. Maviglia, R. Mitteau, R. Neu, D. Pfefferle, K. Schmid, M. Siccinio, B. Sieglin, C. Silva, A. Snicker, F. Subba, J. Varje and H. Zohm, The DEMO wall load challenge, *Nucl. Fusion* **57** 046002 (2017)
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- 28) Baquero-Ruiz M, Manke F, Furno I, **Fasoli A** , Ricci P, Meandering particle bunches and a link between averages of time series of particle counts and higher-order moments, *Phys Rev E* **98**, 032111 (2018)

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- 30) **Fasoli A** , *Nucl. Fusion* **59** 010202 (2019)
- 31) Manke F, Baquero-Ruiz M, Furno I, Chellai O, **Fasoli A** , Ricci P, Time intermittency in nondiffusive transport regimes of suprathermal ions in turbulent plasmas, *Phys Rev E* **99**, 053208 (2019)
- 32) Coda S for the TCV Team, **Fasoli A** , Physics research on the TCV tokamak facility: from conventional to alternative scenarios and beyond, *Nucl. Fusion* **59** 112023 (2019)
- 33) Joffrin E for the JET Team, **Fasoli A** , Overview of the JET preparation for deuterium–tritium operation with the ITER like-wall, *Nucl. Fusion* **59** 112021 (2019)
- 34) F. Manke, M. Baquero-Ruiz, I. Furno, O. Chellaï, **A. Fasoli**, and P. Ricci, Truncated Lévy motion through path integrals and applications to nondiffusive suprathermal ion transport, *Phys. Rev. E* **100**, 052122 (2019).
- 35) **Fasoli, A.**, Furno, I. & Ricci, P. The role of basic plasmas studies in the quest for fusion power, *Nature Physics* **15**, 872 (2019)
- 36) Baquero-Ruiz M., Manke F., Furno I., **Fasoli A.**, Ricci P., Particle transport at arbitrary timescales with Poisson-distributed collisions, *Physical Review E* **100** 052134 (2019).
- 37) **Fasoli A** , *Nucl. Fusion* **60** 010201 (2020)
- 38) **Fasoli A** , Reimerdes H, Alberti S, Baquero-Ruiz M, Duval BP, Havlikova E, Karpushov A, Moret JM, Toussaint M, Elaïan H, Silva M, Theiler C, Vaccaro D, TCV heating and divertor upgrades, *Nucl. Fusion* **60** 016019 (2020)
- 39) Dvornova A, Huijsmans GTA, Sharapov S, Artola Such FJ, Puglia P, Hoelzl M, Pamela S, **Fasoli A** , Testa D, Modeling of TAE mode excitation with an antenna in realistic X-point geometry, *Physics of Plasmas* **27** 012507 (2020)
- 40) Manke F, Baquero-Ruiz M, Furno I, Chellai O, **Fasoli A** , Ricci P, Characterizing time intermittency in non-diffusive fast ion transport through plasma turbulence, *Plasma Phys. Control. Fusion* **62**, 014004 (2020)
- 41) Micheletti P, Baquero-Ruiz M, Manke F, Furno I, Ricci P, **Fasoli A** , Bowen P, Morais C, Zhao W, Cathodoluminescent screen imaging system for seeded blob detection in toroidal plasma experiment, *Review of Scientific Instruments* **91**, 053501 (2020)
- 42) Tinguely RA, Puglia PG, Fil N, Dowson S, Porkolab M, **Fasoli A** , Testa D and JET Contributors, Results from the Alfvén Eigenmode Active Diagnostic during the 2019-2020 JET deuterium campaign, *Plasma Phys. Control. Fusion* **62** 115002 (2020)
- 43) Turner M for the AWAKE Collaboration, **A. Fasoli**, Experimental study of wakefields driven by a self-modulating proton bunch in plasma, *Physical Review Accelerators And Beams* **23**, 081302 (2020)
- 44) Fontana, M., Porte, L., Coda, S., Sauter, O., Brunner, S., Jayalekshmi, A.C., **Fasoli, A.**, Merlo, G., Effects of collisionality and T_e/T_i on fluctuations in positive and negative δ tokamak plasmas, *Nuclear Fusion* **60**, 016006 (2020)
- 45) Moradi S., et al., **A.Fasoli**, Global scaling of the heat transport in fusion plasmas, *Physical Review Research*, **2** 013027 (2020)

- 46) Baquero-Ruiz, M., **Fasoli, A.**, Furno, I., Manke, F., Ricci, P., Persistent random walks of charged particles across magnetic field lines, *Physical Review E* 102, 053206 (**2020**)
- 47) Buratin, E., Baglin, V., Henrist, B., Chiggiato, P., **Fasoli, A.**, Electron flux and pressure dynamic in the LHC vacuum pilot sector as a function of beam parameters and beam pipe properties, *Physical Review Accelerators and Beams*, **23** 114802 (**2020**)
- 48) Braunmüller, F. et al., **Fasoli A.**, Proton Bunch Self-Modulation in Plasma with Density Gradient, *Physical Review Letters*, **125** 264801 (**2020**)
- 49) Tema Biwole A., Porte L., **Fasoli A.**, Simonetto A., D'Arcangelo O., Performance of a high vacuum, high temperature compatible millimeter-range viewing dump for the vertical ECE experiment on TCV, *Fusion Engineering and Design* **162** 112079 (**2021**)
- 50) **Fasoli A** , *Nucl. Fusion* **61** 010401 (**2021**)
- 51) Chappell, J. et al., **A.Fasoli**, Experimental study of extended timescale dynamics of a plasma wakefield driven by a self-modulated proton bunch, *Physical Review Accelerators and Beams*, **24** 011301 (**2021**)
- 52) Reimerdes, H., Duval, B.P., Elaian, H., **Fasoli, A.**, Février, O., Theiler, C., Bagnato, F., Baquero-Ruiz, M., Blanchard, P., Brida, D., Colandrea, C., de Oliveira, H., Galassi, D., Gorno, S., Henderson, S., Komm, M., Linehan, B., Martinelli, L., Maurizio, R., Moret, J.-M., Perek, A., Raj, H., Sheikh, U., Testa, D., Toussaint, M., Tsui, C.K., Wensing, M., the TCV team, the EUROfusion MST1 team, Initial TCV operation with a baffled divertor, *Nuclear Fusion*, **61** 024002 (**2021**)
- 53) Tinguely, R.A., Puglia, P.G., Fil, N., Dowson, S., Porkolab, M., Dvornova, A., **Fasoli, A.**, Fitzgerald, M., Guillemot, V., Huysmans, G.T.A., Maslov, M., Sharapov, S., Testa, D., JET contributors, Experimental studies of plasma-antenna coupling with the JET Alfvén Eigenmode Active Diagnostic, *Nuclear Fusion*, **61** 026003 (**2021**)
- 54) Baquero-Ruiz, M., Coda, S., Dolizy, F., Duval, B., **Fasoli, A.**, Ferrara, A., Maccallini, E., Manini, P., Martin, Y., Mura, M., Reimerdes, H., Siviero, F., Non-evaporable getter pump operations in the TCV tokamak, *Fusion Engineering and Design*, **165** 112267 (**2021**)
- 55) Batsch, F. et al., **A.Fasoli**, Transition between Instability and Seeded Self-Modulation of a Relativistic Particle Bunch in Plasma, *Physical Review Letters*, **126** 164802 (**2021**)
- 56) Schmidt, B.S., Salewski, M., Reman, B., Dendy, R.O., Moseev, D., Ochoukov, R., **Fasoli, A.**, Baquero-Ruiz, M., Järleblad, H., Determining 1D fast-ion velocity distribution functions from ion cyclotron emission data using deep neural networks, *Review of Scientific Instruments*, **92** 053528 (**2021**)
- 57) Morales Guzmán, P.I. et al., **A.Fasoli**, Simulation and experimental study of proton bunch self-modulation in plasma with linear density gradients, *Physical Review Accelerators and Beams*, **24** 101301 (**2021**)
- 58) Hafych V. et al., **A.Fasoli**, Analysis of proton bunch parameters in the AWAKE experiment, *Journal of Instrumentation*, **16** P11031 (**2021**)
- 59) Galassi D. et al., **A.Fasoli**, Validation of edge turbulence codes in a magnetic X-point scenario in TORPEX, *Physics of Plasmas* **29** 012501 (**2022**)
- 60) Degraeve J. et al., **A.Fasoli**, Magnetic Control of Tokamak Plasmas Through Deep Reinforcement Learning, *Nature* **602** (7897) (**2022**)
- 61) Reimerdes H. et al., **A.Fasoli**, Overview of the TCV tokamak experimental programme, *Nuclear Fusion*, **62** 042018 (**2022**)

- 62) Mailloux J. et al., **Fasoli A.**, Overview of JET results for optimising ITER operation, *Nuclear Fusion*, **62** 042026 (2022)
- 63) Mazzi S. et al., **Fasoli A.**, Enhanced performance in fusion plasmas through turbulence suppression by megaelectronvolt ions, *Nature Physics*, **18**, 776 (2022)
- 64) Tinguely R.A. et al., **Fasoli A.**, A novel measurement of marginal Alfvén eigenmode stability during high power auxiliary heating in JET, *Nuclear Fusion*, **62** 076001 (2022)
- 65) Verra L. et al., **Fasoli A.**, Controlled Growth of the Self-Modulation of a Relativistic Proton Bunch in Plasma, *Physical Review Accelerators and Beams*, **25** 024802 (2022)
- 66) Gschwendtner D. et al., **Fasoli A.**, The AWAKE Run 2 Programme and Beyond, *Symmetry-Basel*, **14** 1680 (2022)
- 67) Tinguely R.A. et al., **Fasoli A.**, Simultaneous measurements of unstable and stable Alfvén eigenmodes in JET, *Nuclear Fusion*, **62** 112008 (2022)
- 68) Karpushov, AN et al., **Fasoli A.**, Upgrade of the neutral beam heating system on the TCV tokamak - second high energy neutral beam, *FUSION ENGINEERING AND DESIGN*, **187** 113384, (2022)
- 69) Furno I., Ricci P., Fasoli A., Riva F. and Theiler C., Verification and validation in plasma physics, ISBN: 978-0-7503-3557-7, IOP Publishing Ltd , Chapter 20, Pages 20-1 to 20-31 (2022)
- 70) Fasoli A., Essay: Overcoming the Obstacles to a Magnetic Fusion Power Plant, *Phys. Rev. Lett.* **130** 220001 (2023)
- 71) Verra L. et al., **Fasoli A.**, Development of the self-modulation instability of a relativistic proton bunch in plasma, *Phys. Of Plasmas* **30**, 8 (2023)
- 72) Biwole A.T., Porte L., Coda S., **Fasoli A.** and the TCV Team, Vertical electron cyclotron emission diagnostic on the tokamak à configuration variable, *Rev. Sci. Instruments* **94**, 103504 (2023)
- 73) Nechaeva T. et al., **Fasoli A.**, Hosing of a Long Relativistic Particle Bunch in Plasma, *Phys. Rev. Lett.* **132** 075001 (2024)
- 74) Verra L. et al., **Fasoli A.**, Filamentation of a relativistic proton bunch in plasma, *Phys. Review E* **109** 055203 (2024)
- 75) Tinguely R.A.; Puglia P.G., Dowson S., Porkolab M., Douai D., Fasoli A., Frassinetti L., King D., Schneider P., Isotope effects and Alfvén eigenmode stability in JET H, D, T, DT, and He plasmas, *Nuclear Fusion* **64** 096002 (2024)

25 most representative peer reviewed publications for the period before 2015

- 1) A.Fasoli et al., "Direct Measurement Of Ion Phase-Space Orbits In An Electrostatic Field", *Phys. Rev. Lett.* **63**, 2052 (1989).
- 2) A.Fasoli et al., "Dynamical Chaos Of Plasma Ions In Electrostatic Waves", *Phys. Rev. Lett.* **70**, 303 (1993).
- 3) A.Fasoli et al., "Direct Measurement Of The Damping Of Toroidicity Induced Alfvén Eigenmodes", *Phys. Rev. Lett.* **75**(4), 645 (1995)
- 4) A.Fasoli et al., "Observation Of Multiple Kinetic Alfvén Eigenmodes", *Phys. Rev. Lett.* **76**(7), 1067 (1996).
- 5) A.Fasoli et al., "Nonlinear Splitting Of Fast Particle Driven Waves In A Plasma: Observation And Theory", *Phys. Rev. Lett.* **81**, 5564 (1998).

- 6) J.Jacquinet et al., A.Fasoli, "Physics of energetic ions", *Nuclear Fusion*, **39** 2471 (1999)
- 7) S.E.Sharapov, D. Borba, A.Fasoli,et al., "Stability of alpha particle driven Alfvén eigenmodes in high performance JET DT plasmas", *Nuclear Fusion*, **39** 373 (1999)
- 8) J.Egedal and A.Fasoli, "Single-particle dynamics in collisionless magnetic reconnection", *Phys. Rev. Lett.* **86**, 5047 (2001)
- 9) A Fasoli et al., "MHD Spectroscopy", *Plasma Phys. and Contr. Fusion* **44**, B159 (2002)
- 10) J.Egedal, A.Fasoli and J.Nazemi, "Dynamical Plasma Response During Driven Magnetic Reconnection", *Phys. Rev. Lett.* **90**, 135003 (2003)
- 11) S.H.Muller, A.Fasoli, et al. "Effects of a vertical magnetic field on particle confinement in a magnetized plasma torus", *Physical Review Letters* **93** (16) (2004)
- 12) A.Fasoli et al., "Physics of energetic ions", Chapter 5 of *ITER Physics Basis*, *Nuclear Fusion* **47**, S264 (2007)
- 13) A.Fasoli et al., "Overview of TCV results", *Nucl. Fusion* **48**, 034001 (2008)
- 14) I. Furno et al., A. Fasoli, "Experimental Observation of the Blob-Generation Mechanism from Interchange Waves in a Plasma", *Phys. Rev. Lett.* **100**, 055004 (2008)
- 15) M.Podestà, A.Fasoli et al., "Cross-Field Transport by Instabilities and Blobs in a Magnetized Toroidal Plasma", *Phys. Rev. Lett.* **101**, 045001 (2008)
- 16) A.Diallo et al., A.Fasoli, "Dynamics of Plasma Blobs in a Sheared Flow", *Phys. Rev. Lett.* **101**, 115005 (2008)
- 17) C.Theiler et al., A.Fasoli, "Cross-Field Motion of Plasma Blobs in an Open Magnetic Field Line Configuration", *Phys. Rev. Lett.* **103**, 065001 (2009)
- 18) A.Fasoli et al., "Overview of physics research on the TCV tokamak", *Nucl. Fusion* **49**, 104005 (2009)
- 19) A.Fasoli et al., "Active excitation and damping rate measurement of intermediate-n toroidal Alfvén eigenmodes in JET, C-Mod and MAST plasmas", *Plasma Phys. Control. Fusion* **52**, 075015 (2009)
- 20) A Fasoli et al., "Electrostatic instabilities, turbulence and fast ion interactions in the TORPEX device", *Plasma Phys. Control. Fusion* **52** 124020 (2010).
- 21) I. Furno et al., A. Fasoli, "Direct Two-Dimensional Measurements of the Field-Aligned Current Associated with Plasma Blobs", *Phys. Rev. Lett.* **106**, 245001 (2011).
- 22) K. Gustafson, P. Ricci, I. Furno, and A. Fasoli "Nondiffusive Suprathermal Ion Transport in Simple Magnetized Toroidal Plasmas", *Phys. Rev. Lett.* **108**, 035006 (2012).
- 23) C. Theiler, I. Furno, J. Loizu, A.Fasoli, "Convective cells and blob control in a simple magnetized plasma", *Phys. Rev. Lett.* **108**, 065005 (2012).
- 24) D. Perrone et al., Fasoli, A., "Nonclassical transport and particle-field coupling: From laboratory plasmas to the solar wind », *Space Science Reviews*, **178** 233 (2013).
- 25) A.Fasoli et al., "Basic investigations of electrostatic turbulence and its interaction with plasma and suprathermal ions in a simple magnetized toroidal plasma, *Nuclear Fusion*, **53** 063013 (2013)