

# Daniel Carralero

*Experimental Physicist*

## Personal Details

Date of Birth April 19th, 1983  
Citizenship Spanish  
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## General Bibliometrics

73 articles in journals listed in Web of Science.  
1098 citations in Google Scholar (GS) - 1066 in Web of Science (WoS). Average citations per year over the last five years: 162 in GS (166.2 in WoS).  
h-index: 17 in GS and 17 WoS.

## Education

- March-April'15 **École de Physique des Houches**, *Turbulence, magnetic fields and self organization in laboratory and astrophysical plasmas*, Centre National de la Recherche Scientifique, Université Joseph Fourier of Grenoble.
- Feb'08 - **PhD in Fusion Plasma Physics**, *EURATOM-CIEMAT Association/Universidad Politécnica de Madrid*.  
May'12 PhD dissertation "Electromagnetic Instability Studies in the Edge of Fusion Plasmas" awarded *Cum Laude* mention.
- Jul'07 **Culham Plasma Physics Summer School**, *EURATOM-UKAEA Fusion Association, Culham Science Centre*.
- Sep'00 - **Aerospace Engineering Degree**, *Universidad Politécnica de Madrid*, Five year program, Space Vehicles specialization, *Pegasus Certificate* and *Pegasus Award* in recognition of excellence and multinational studies.  
Apr'07 Master Thesis Project "*Interaction between Magnetized Plasmas and Walls*" awarded First Class Honors.

## Experience

- September'17 **TJ-II Experimental Physics Group**, *EURATOM-CIEMAT Association*.  
– Today Senior scientist currently operating and analyzing the data from the V-band Doppler reflectometers at Wendelstein-7X Main research interests include edge and SOL transport processes, turbulence characterization, filamentary structures, pedestal physics and planetary magnetosphere.
- July'15 – **ASDEX Upgrade E2M Division**, *Max-Planck-Institut für Plasmaphysik*.  
August'17 Senior scientist in the Plasma Edge Physics Group. Responsible for AUG probe diagnostics, including midplane manipulator, divertor flush mounted probes and auxiliary systems.
- August'12 – **ASDEX Upgrade E2M Division**, *Max-Planck-Institut für Plasmaphysik*.  
June'15 Post-doctoral researcher in the Plasma Edge Physics Group. Operation of probe diagnostics installed in the midplane manipulator of ASDEX Upgrade tokamak.
- May'07 – **TJ-II Experimental Physics Group**, *EURATOM-CIEMAT Association*.  
July'12 PhD research activities focused on the experimental operation of fast camera and probe diagnostics for the study of edge turbulence and plasma-wall interaction phenomena in TJ-II, including data analysis (automated image feature recognition, fast camera velocimetry, correlation and conditional averaging studies, and calculation of self-similar properties of data series) and the design, construction and commission of an electromagnetic vorticity probe in TJ-II for the study of EM effects in edge turbulence in collaboration with Consorzio RFX (Padova, Italy).
- Sep'05 – **Undergraduate Research Activities**, *Mathematical Fundamentals Department, Universidad Politécnica de Madrid*.  
Apr'07 Tutored research focused on the analysis of the Bohm sheath entry condition and the existence of EM intermediate scales. The work consisted mainly on fluid numerical simulations of plasma channels between dielectric walls in the presence of oblique magnetic fields.

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## Grants and Prizes awarded

- Oct'17 **Nominated for the 2017 Nuclear Fusion Award**, for the paper "An experimental investigation on the high density transition of the Scrape-off Layer transport in ASDEX Upgrade".
- May'13-  
May'15 **EFDA Fellowship**, Proposal "Investigation of Turbulent Transport in the Scrape-Off Layer of ASDEX-Upgrade" selected for the EFDA 2013 Work Programme Fusion Researcher Fellowships, This Fellowship covers salary and overhead costs plus travel expenses for a period of two years.
- Jan'14 **Premio Extraordinario de Doctorado**, Extraordinary PhD Prize awarded by the Universidad Politécnica de Madrid.
- Jul'11 **Itoh Project Prize accesit**, Poster "Recent Results on the Search of Self Organization of Plasma Edge Fluctuations" awarded "Highly Commended Work" mention by the Itoh Project Prize in Plasma Turbulence Committee, 38th EPS Conference, Strasbourg.
- Feb'08 -  
Feb'12 **Beca de Formación de Personal Investigador (FPI)**, Spanish Ministerio de Ciencia y Tecnología, Four-years PhD grant.
- Oct'06 **Winner of "YES3 Call for Proposals" contest**, European Space Agency.  
Sponsored to attend Young Engineer Satellite (YES) symposium in Patras, Greece. The proposed Project, "Magnoglider: Bringing Picosat and Electrodynamic Technology into Space Mail Concept" was selected for the for the YES3 flight opportunity
- Sep'05 -  
Apr'07 **Beca de Colaboración Universitaria**, Spanish Ministerio de Ciencia y Tecnología, Mathematical Fundamentals Department, Universidad Politécnica de Madrid.  
Part-time research undergraduate grant
- Mar'04 -  
Jul'04 **Winner at "7th Student Parabolic Flight Campaign" contest**, European Space Agency.  
Design, implementation and flight operation of experimental microgravity isolation module "VMD"
- Jun'00 **Premio Extraordinario de Bachillerato**, awarded by the Spanish Ministry of Education to the top high school students..

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## Research Projects

- 2018 **"Characterization of edge transport in an optimized stellarator"**, Convocatoria Ayudas Atracción de Talento Investigador, Madrid Regional Government Grant, Budget: 283 k, P.I.: **D.Carralero**.
- 2017 **"Experimental study of fluxes, turbulence and Alfvén modes in the TJ-II and W7-X stellarators"**, Proyecto Excelencia, Spanish National Research Agency, Budget: 66.5 k, P.I.: T. Estrada and **D.Carralero**.
- 2015 **"Validation of the SOL density width scaling with divertor collisionality"**, ITPA Task, ITPA DivSOL Topical Group, P.I.: **D.Carralero**.
- 2015 **"Filamentary transport in the SOL"**, Experiment AUG15-2.2-3, Work Programme MST1, EUROfusion, Budget: 137 k/year, Scientific Coordinator: **D.Carralero**.
- 2013-2015 **"Investigation of Turbulent Transport in the Scrape-Off Layer of ASDEX-Upgrade"**, EFDA 2013 Work Programme Fusion Researcher Fellowships, WP13-FRF-IPP/Carralero, 30 April 2013, Budget: 65 k/year, P.I.: **D.Carralero**.
- 2013-2014 **"Magnetic reconnection in fusion plasmas"**, EUROfusion Enabling Research Project, Budget: 179 k, P.I.: E. Martines.
- 2013-2014 **"Understanding of turbulent edge/SOL transport and structure formation by joint experiment and modelling approach"**, EUROfusion Enabling Research Project, Budget: 274 k, P.I.: A. Kendl, Experimental Coordinator: **D. Carralero**.
- 2013-2014 **"SOL filamentary transport at high density"**, EUROfusion Working Program Medium Size Tokamak 1, AUG14-2.2-3, P.I.: H.W. Müller, N. Vianello.
- 2013-2015 **"Estudio y Control del Transporte de Naturaleza Turbulenta en Plasmas Confinados Magnéticamente"**, Plan Nacional de I+D+i, Programa Nacional de Proyectos de Investigación Fundamental, Ministerio de Ciencia e Innovación, ENE2012-38620-C02-01, 143 k, P.I.: C. Hidalgo.
- 2009-2011 **"Physical Mechanisms on Plasma Transport and Confinement Transitions"**, Plan Nacional de I+D+i, Programa Nacional de Proyectos de Investigación Fundamental, Ministerio de Ciencia e Innovación, ENE2009-12213-C03-01, P.I.: M.A. Pedrosa.

## Academic service and institutional responsibilities

- 2017-today **Member of the ITPA Scrape-off Layer and Divertor Topical Group**, *stellarator representative*.
- 2015-today **Scientific coordinator**, of the ITPA task *Validation of the SOL density width scaling with divertor collisionality*.

Referee for Journal of Nuclear Materials (2014 - today), Nuclear Fusion (2015-today), Plasma Physics and Controlled Fusion (2015-today), Nuclear Materials and Energy (2016- today), Review of Scientific Instruments (2017 - today) Physical Review Letters (2017 - today) and Europhysics Letters (2017 - today).

## International Experience

- 2019 **Wendelstein 7-X, Max Planck Institute for Plasma Physics, Greifswald, Germany**, Discussion of the OP1.2b campaign and preparation of OP2 campaign.  
5 weeks
- 2018 **Wendelstein 7-X, Max Planck Institute for Plasma Physics, Greifswald, Germany**, Participation in the OP1.2b campaign of the W-7X stellarator.  
6 weeks
- 2017 **Wendelstein 7-X, Max Planck Institute for Plasma Physics, Greifswald, Germany**, Participation in the OP1.2a campaign of the W-7X stellarator.  
6 weeks
- 2017 **COMPASS, Institute of Plasma Physics, Prague, Czech Republic**, Participation in the COMPASS tokamak campaign.  
2 weeks
- 2015 **DIII-D, General Atomics, San Diego, USA**, Data mining from DIII-D tokamak in the framework of the multimachine study of shoulder formation included in ITPA DivSOL task 34.  
2 weeks
- 2013 **JET, Culham Science Center, Abingdon, UK**, Participation in the JET experimental program, M13-18 experiment.  
2 weeks
- 2012-2013 **COMPASS, Institute of Plasma Physics, Prague, Czech Republic**, Commission and operation of a Retarding Field Analyzer for the measurement of ionic temperature in the SOL of the COMPASS tokamak.  
4 weeks
- 2008-2010 **LHD, National Institute for Fusion Science, Toki, Japan**, Installation and operation of a fast visible camera in the LHD heliotron for the study of turbulent structures in the edge and SOL.  
14 weeks
- 2008-2009 **JET, Culham Science Center, Abingdon, UK**, Design and installation of a shielded image intensifier system for the KL8 visible fast camera diagnostic in JET.  
12 weeks
- 2004-2005 **TU Delft University, Delft, The Netherlands**, Erasmus Program exchange.  
10 months

Currently, in active collaboration with groups in IPP-Garching, IPP-Greifswald, DIII-D, TCV, COMPASS, JET and ITER Organization.

## Invited Talks

- **Chairman** of the “Far-SOL fluxes” session. Contributed the talk “Far-SOL fluxes and their link to detachment. Current status of JRT DSOL-34” **D. Carralero**, T. Lunt, A. Zito, et al. *27th ITPA Meeting on SOL/divertor physics*, Garching, Germany, 2019.
- **Chairman** of the “Far-SOL fluxes” session. Contributed the talk “Report from AUG and COMPASS and on thermal transport associated with shoulder formation” **D. Carralero**, J. Adamek, S. Artene, et al. *25th ITPA Meeting on SOL/divertor physics*, Chengdu, China, 2018.
- **Chairman** of the “Far-SOL fluxes and link to detachment” session. Contributed the talk “Report on DSOL-34 new results from AUG” **D. Carralero**, M. Komm, M. Siccinio, et al. *23rd ITPA Meeting on SOL/divertor physics*, Naka, Japan, 2016.
- Filamentary transport: Multi-machine experiments **D. Carralero**, S. A. Artene, M. Komm, et al. *8th COMPASS Programmatic Conference*, Prague, Czech Republic, 2016.
- Implications of high density operation on SOL transport: A multimachine investigation **D. Carralero**, H.W. Müller, M. Groth, et al. *21st International Plasma-Surface Interaction Conference*, Kanazawa, Japan, 2014.
- Far SOL Plasma Fluxes **D. Carralero**, H. J. Sun, S. A. Artene, et al. *21st ITPA meeting on SOL/divertor physics*, PPPL, Princeton, USA, 2015.
- First wall flux distribution in DEMO size devices **D. Carralero**, H.W. Müller, M. Groth, et al. *22th European Fusion Program Workshop*, Split, Croatia, 2014.

## Seminars

- Recent experimental activities in the optimized stellarator Wendelstein 7-X *Seminario de Física*, Universidad Carlos III de Madrid, April 2019.
- The influence of the divertor regime on filamentary transport *Exhaust Physics Forum*, University of York, November 2014.
- On the increase of SOL transport at high density operation *Seminario de Física*, Laboratorio Nacional de Fusión (CIEMAT), January 2014.
- Experimental Studies on Edge Filament Properties *IPP Garching Physics Meeting*, Max-Planck-Institut für Plasmaphysik, May 2012.
- Experimental Studies on Edge Filament Properties *CRPP Physics Meeting*, CRPP, February 2012.
- Design and Construction of an EM probe for TJ-II *HSX Physics meeting*, University of Wisconsin, June 2011.

## Teaching Experience

- Sergiu Adrian Artene Master thesis “A study on the transport of particles and heat of plasma filaments in the scrape-off layer of ASDEX Upgrade”, Technischen Universität München, November 2016.
- Federico D’Isa Master thesis “Evolution of the scrape-off layer plasma background at density shoulder formation”, Università degli Studi di MILANO - BICOCCA, October 2016. Rated “cum Laude”.
- Sergiu Adrian Artene, Grade Degree Dissertation “Grade Filament Ion Temperature of the Scrape-Off Layer in ASDEX Upgrade Tokamak”, Universidad Complutense de Madrid, June 2015.

## Languages

Spanish **Native**    English **Fluent**    German **Medium**    French **Basic**

## Journal Articles

- 78) E. Trier, E. Wolfrum, M. Willensdorfer, Q. Yu, ..., A. Carls, **D. Carralero**, L. Carraro, ..., S. Zoletnik and M. Zuin ELM-induced cold pulse propagation in ASDEX Upgrade. *Nuclear Fusion*, **59**, 112004 (2019).
- 77) T. Klinger, T. Andreeva, S. Bozhnikov, C. Brandt, ..., M. Carr, Carralero, **D. Carralero**, P. Carvalho, ..., S. Zoletnik and M. Zuin Overview of first Wendelstein 7-X high-performance operation. *Nuclear Fusion*, **59**, 112004 (2019).
- 76) J. Karhunen, M. Groth, D.P. Coster, **D. Carralero**, L. Guimaraes, V. Nikolaeva, S. Potzel, T. Pütterich, F. Reimold, A. Scarabosio, E. Viezzer, M. Wischmeier and the AUG Team. SOLPS 5.0 simulations of the high-field side divertor detachment of L-mode plasmas in ASDEX upgrade with convection-dominated radial SOL transport. *Nuclear Materials and Energy*, **19**, 279-286 (2019).
- 75) T. Estrada, E. Sanchez, J. M. García Regaña, J. A. Alonso, E. Ascasibar, I. Calvo, A. Cappa, **D. Carralero**, C. Hidalgo, M. Liniers, I. Pastor, J. L. Velasco and the TJ-II Team Turbulence and perpendicular plasma flow asymmetries measured at TJ-II plasmas. *Nuclear Fusion*, **59**, 076021 (2019).
- 74) J. M. García-Regaña, T. Estrada, I. Calvo, J. L. Velasco, J. A. Alonso, **D. Carralero**, R. Kleiber, M. Landreman, A. Mollén, E. Sánchez, C. Slaby and TJ-II Team and W7-X Team On-surface potential and radial electric field variations in electron root stellarator plasmas. *Plasma Physics and Controlled Fusion*, **60**, 104002 (2018).
- 73) **D. Carralero**, S. Artene, M. Bernert, G. Birkenmeier, M. Faitsch, P. Manz, P. de Marne, U. Stroth, M. Wischmeier, E. Wolfrum, The ASDEX Upgrade Team and The EURO-fusion MST1 Team On the role of filaments in perpendicular heat transport at the scrape-off layer. *Nuclear Fusion*, **58**, 096015 (2018).

- 72) A Kallenbach, H J Sun, T Eich, **D Carralero**, J Hobirk, A Scarabosio, M Siccino, ASDEX Upgradeteam and EUROfusion MST1 team Parameter dependences of the separatrix density in nitrogen seeded ASDEX Upgrade H-mode discharges. *Plasma Physics and Controlled Fusion*, **60**, 045006 (2018).
- 71) F M Laggner, S Keerl, J Gnisen, E Wolfrum, M Bernert, **D Carralero**, L Guimaraes, ... , M Wischmeier, F Aumayr, the EUROfusion MST1 Team and the ASDEX Upgrade Team Divertor, scrape-off layer and pedestal particle dynamics in the ELM cycle on ASDEX Upgrade. *Plasma Physics and Controlled Fusion*, **60**, 025002 (2018).
- 70) J.M. Garcia-Regana, T. Estrada, I. Calvo, J.L. Velasco, J. A. Alonso, **D. Carralero**, R. Kleiber, M. Landreman, A. Mollen, E. Sánchez, C. Slaby. On-surface potential and radial electric field variations in electron root stellarator plasmas. *Plasma Physics and Controlled Fusion*, **60**, 104002 (2018).
- 69) V Nikolaeva, L Guimaraes, P Manz, **D. Carralero**, M E Manso, U Stroth, C Silva, G D Conway, E Seliunin, J Vicente, D Brida, D Aguiam, J Santos, A Silva, ASDEX Upgrade team and MST1 team Characterization of edge turbulence in different states of divertor detachment using reflectometry in the ASDEX Upgrade tokamak. *Plasma Physics and Controlled Fusion*, **60**, 055009 (2018).
- 68) R. Häcker, G. Fuchert, **D. Carralero** and P. Manz Estimation of the plasma blob occurrence rate. *Physics of Plasmas*, **25**, 012315 (2018).
- 67) L. Guimaraes, S. Potzel, M. Bernert, **D. Carralero**, V. Nikolaeva, F. Reimold, G.D. Conway, M.E. Manso, J. Santos, A. Silva, C. Silva, E. Wolfrum, ASDEX Upgrade Team Poloidal asymmetries in the edge density profiles on ASDEX-Upgrade. *Nuclear Materials and Energy*, **58**, 026005 (2017).
- 66) S. Brezinsek, A. Hakola, H. Greuner, M. Balden, A. Kallenbach ..., R. Caniello, **D. Carralero**, S. Elgeti, ... ,R. Neu, Ch. Linsmeier and the EUROfusion MST1 Team Surface modification of He pre-exposed tungsten samples by He plasma impact in the divertor manipulator of ASDEX Upgrade. *Nuclear Materials and Energy*, **12**, 575-581 (2017).
- 65) X. Litaudon and S. Abduallev and M. Abhangi and P. Abreu and M. Afzal, ..., M. Carr, **D. Carralero**, L. Carraro, ... S. Zoletnik and I. Zychor and JET Contributors. Overview of the JET results in support to ITER. *Nuclear Fusion*, **57**, 102001 (2017).
- 64) **D. Carralero**, M. Siccino, M. Komm, S. A. Artene, F. A. D'Isa, J. Adamek, L. Aho-Mantila, G. Birkenmeier, M. Brix, G. Fuchert, M. Groth, T. Lunt, P. Manz, J. Madsen, S. Marsen, H. W. Müller, U. Stroth, H. J. Sun, N. Vianello, M. Wischmeier, E. Wolfrum, ASDEX Upgrade Team, COMPASS Team, JET Contributors and the EUROfusion MST team. Recent progress towards a quantitative description of filamentary SOL transport. *Nuclear Fusion*, **57**, 056044 (2017).
- 63) N. Vianello, C. Tsui, C. Theiler, S. Allan, ..., M. Spolaore, **D. Carralero**, J. Madsen, B. Lipschultz, F. Militello, The TCV Team and The EUROfusion MST1 Team Modification of SOL profiles and fluctuations with line-average density and divertor flux expansion in TCV. *Nuclear Fusion*, **57**, 066014 (2017).
- 62) Ye. O. Kazakov, J. Ongena, J.C. Wright, S.J. Wukitch, ..., M. Carr, **D. Carralero**, L. Carraro, ... S. Zoletnik and I. Zychor Efficient generation of energetic ions in multi-ion plasmas by radio-frequency heating. *Nature Physics*, **13**, 973978 (2017).
- 61) A. Kallenbach, D Aguiam, L Aho-Mantila, C Angioni, N Arden, ..., M. Carr, **D. Carralero**, L. Casali, ..., S. Zoletnik, H. Zohm. Overview of ASDEX Upgrade results. *Nuclear Fusion*, **57**, 102015 (2017).
- 60) H Meyer, T Eich, M Beurskens, S Coda, ..., M. Carr, **D. Carralero**, P. Carvalho, ..., S. Zoletnik, M. Zuin and the ASDEX Upgrade, MAST and TCV Teams Overview of progress in European medium sized tokamaks towards an integrated plasma-edge/wall solution. *Nuclear Fusion*, **57**, 086007 (2017).
- 59) A. Huber, S. Wiesen, M. Bernert, S. Brezinsek, ..., M. Brix, **D. Carralero**, E. Delabie, ..., M. Wischmeier, H. Zohm, JET contributors and ASDEX Upgrade Team The effect of the isotope on the H-mode density limit. *Nuclear Fusion*, **57**, 102014 (2017).
- 58) W Zhang, V Bobkov, JM Noterdaeme, W Tierens, R Bilato, **D Carralero**, D Coster, J Jacquet, P Jacquet, T Lunt, RA Pitts, V Rohde, G Siegl, H Fuenfgelder, D Aguiam, A Silva, L Colas, S Ceccuzzi Effects of outer top gas injection on ICRF coupling in ASDEX Upgrade: towards modelling of ITER gas injection. *Plasma Physics and Controlled Fusion*, **59**, 075004 (2017).

- 57) A. Hakola, S. Brezinsek, D. Douai, M. Balden, V. Bobkov, **D. Carralero**, H. Greuner, S. Elgeti, A. Kallenbach, K. Krieger, ..., I. B. Radovic, Z. Siketic, ASDEX Upgrade Team and EUROfusion MST1 Team Plasma-wall interaction studies in the full-W ASDEX upgrade during helium plasma discharges. *Nuclear Fusion*, **57**, 066015 (2017).
- 56) D. Brida, T. Lunt, M. Wischmeier, G. Birkenmeier, b, P. Cahyna, **D. Carralero**, M. Faitsch, Y. Feng, B. Kurzan, M. Schubert, B. Sieglin, W. Suttrop, E. Wolfrum and the ASDEX Upgrade Team. Determination of the stochastic layer properties induced by magnetic perturbations via heat pulse experiments at ASDEX upgrade. *Nuclear Materials and Energy* **12**, 831-837 (2017).
- 55) D. Brida, T. Lunt, M. Wischmeier, M. Bernert, **D. Carralero**, M. Faitsch, Y. Feng, T. Sehmer, B. Sieglin, W. Suttrop, E. Wolfrum, the ASDEX Upgrade Team, The MST1 Team Heat Flux Pattern in Detached L- and ELM Mitigated H-Modes with Rotating Magnetic Perturbations in ASDEX Upgrade. *Nuclear Fusion*, **57**, 116006 (2017).
- 54) W. Zhang, V. Bobkov, J-M. Noterdaeme, W. Tierens, R. Bilato, **D. Carralero**, D. Coster, J. Jacquot, P. Jacquet, T. Lunt, R. A. Pitts, V. Rohde, G. Siegl, H. Fuenfgelder, D. Aguiam, A. Silva, L. Colas, S. Ceccuzzi and the ASDEX Upgrade Team Effects of outer top gas injection on ICRF coupling in ASDEX Upgrade: towards modelling of ITER gas injection. *Plasma Physics and Controlled Fusion*, **59**, 075004 (2017).
- 53) T. Lunt, F. Reimold, E. Wolfrum, **D. Carralero**, Y. Feng, K. Schmid Influence of the first wall material on the particle fuelling in ASDEX Upgrade. *Plasma Physics and Controlled Fusion*, **59**, 055016 (2017).
- 52) **D. Carralero**, J. Madsen, S. A. Artene, M. Bernert, G. Birkenmeier, T. Eich, G. Fuchert, F. Laggner, V. Naulin, P. Manz, N. Vianello, E. Wolfrum, the EUROfusion MST1 team and the ASDEX Upgrade Team. A study on the H-mode density shoulder formation. *Nuclear Materials and Energy* **12**, 1189-1193 (2017).
- 51) A. Huber, M. Bernert, S. Brezinsek and A.V. Chankin, G. Sergienko, V. Huber, ..., **D. Carralero**, ..., M. Wischmeier and H. Zohm. Comparative H-mode density limit studies in JET and AUG. *Nuclear Materials and Energy* **12**, 100-110 (2017).
- 50) J. Karhunen, M. Groth, P. Heliste, T. Pütterich, E. Viezzer, **D. Carralero**, D. Coster, L. Guimaraes, A. Hakola, V. Nikolaeva, S. Potzel and the ASDEX Upgrade Team Measurement of N+ flows in the high-field side scrape-off layer of ASDEX upgrade with different degrees of inner divertor detachment. *Nuclear Materials and Energy* **12**, 935-941 (2017).
- 49) L. Frassinetti, M.G. Dunne, M. Beurskens, E. Wolfrum, A. Bogomolov, **D. Carralero**, M. Cavedon, R. Fischer, F.M. Laggner, R.M. McDermott, H. Meyer, G. Tardini, E. Viezzer, the EUROfusion MST Team and the ASDEX-Upgrade Team. ELM behavior in ASDEX Upgrade with and without nitrogen seeding. *Nuclear Fusion*, **57**, 022004 (2017).
- 48) R. Wenninger, R. Albanese, R. Ambrosino, ..., **D. Carralero**, ..., J. Varje and H. Zohm. The DEMO Wall Load Challenge. *Nuclear Fusion*, **57**, 046002 (2017).
- 47) L. García, M. A. Ochando, B. A. Carreras, **D. Carralero**, C. Hidalgo and B. Ph. van Milligen. Effect of fast electrons on the stability of resistive interchange modes in the TJ-II stellarator. *Physics of Plasmas*, **23**, 062319 (2016).
- 46) G. Fuchert, **D. Carralero**, P. Manz, U. Stroth, E. Wolfrum Towards a quantitative prediction of the blob detection rate. *Plasma Physics and Controlled Fusion*, **58**, 054006 (2016).
- 45) **D. Carralero**, P. Manz, L. Aho-Mantila, G. Birkenmeier, M. Brix, M. Groth, H.W. Müller, U. Stroth, N. Vianello, E. Wolfrum, ASDEX Upgrade team, JET Contributors Experimental validation of a filament transport model in turbulent magnetized plasmas. *Physical Review Letters*, **115**, 215002 (2015).
- 44) T. Lunt, **D. Carralero**, Y. Feng, G. Birkenmeier, H.W. Müller, S. Müller, M. Wischmeier EMC3-Eirene simulations of particle- and energy fluxes to main chamber- and divertor plasma facing components in ASDEX Upgrade compared to experiments. *Journal of Nuclear Materials*, **463**, 744-747 (2015).
- 43) **D. Carralero**, H.W. Müller, M. Groth, M. Komm, J. Adamek, G. Birkenmeier, M. Brix, F. Janky, P. Hacek, S. Marsen, F. Reimold, C. Silva, U. Stroth, M. Wischmeier, E. Wolfrum, ASDEX Upgrade Team, COMPASS Team and JET-EFDA Contributors Implications of high density operation on SOL transport: a multimachine investigation. *Journal of Nuclear Materials*, **463**, 123-127 (2015).

- 42) H.W. Müller, M. Bernert, **D. Carralero**, A. Kallenbach, B. Kurzan, A. Scarabosio, B. Sieglin, L. Tophøj, N. Vianello, E. Wolfrum, ASDEX Upgrade Team Far Scrape-off Layer Particle and Heat Fluxes in High Density-High Power Scenarios. *Journal of Nuclear Materials*, **463**, 739743 (2015).
- 41) F. Romanelli, M. Abhangi, P. Abreu, ..., **D. Carralero**, ..., S. Zoletnik and I. Zychor Overview of the JET results. *Nuclear Fusion*, **55**, 104001 (2015).
- 40) G. Birkenmeier, P. Manz, **D. Carralero**, F.M. Laggner, G. Fuchert, K. Krieger, H. Maier, F. Reimold, K. Schmid, R. Dux, T. Pütterich, M. Willensdorfer, E. Wolfrum Filament transport, warm ions and erosion in ASDEX Upgrade L-mode. *Nuclear Fusion*, **55**, 033018 (2015).
- 39) L. Colas, Ph. Jacquet, D. Van Eester, V. Bobkov, M. Brix, L. Meneses, P. Tamain, S. Marsen, C. Silva, **D. Carralero**, M. Kocan, H.-W. Müller, K. Crombé, A. Kivska, M. Goniche, E. Lerche, F.G. Rimini Localized Scrape-Off Layer density modifications by Ion Cyclotron near fields in {JET} and ASDEX-Upgrade L-mode plasmas. *Journal of Nuclear Materials*, **463**, 735738 (2015).
- 38) M. Bernert, T. Eich, A. Kallenbach, **D. Carralero**, A. Huber, P.T. Lang, S. Potzel, F. Reimold, J. Schweinzer, E. Viezzer, H. Zohm The H-mode density limit in the full tungsten ASDEX Upgrade tokamak. *Plasma Physics and Controlled Fusion*, **57**, 014038 (2015).
- 37) P. Manz, T.T. Ribeiro, B.D. Scott, G. Birkenmeier, **D. Carralero**, G. Fuchert, S.H. Müller, H.W. Müller, U. Stroth, E. Wolfrum Origin and turbulence spreading of plasma blobs. *Physics of Plasmas*, **22**, 022308 (2015).
- 36) M. Spolaore, N. Vianello, I. Furno, **D. Carralero**, M. Agostini, J. A. Alonso, F. Avino, ..., C. Theiler and M. Zuin Electromagnetic turbulent structures: an ubiquitous feature of the edge region of toroidal plasma configurations. *Physics of Plasmas*, **22**, 012310 (2015). **Paper highlighted in Editor's Picks**
- 35) P. Manz, G. Birkenmeier, **D. Carralero**, G. Fuchert, H. W. Müller, S. Müller, B. Scott, T. Ribeiro, U. Stroth and E. Wolfrum. Influence of finite ion temperature on plasma blob dynamics. *Plasma Physics and Controlled Fusion*, **57**, 014012 (2015).
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